

SB 273

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1873

# TOBACCO

—IN—

Virginia <sup>and</sup> North Carolina.

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Some observations in connection with the several types of Tobacco now produced in these two States (including Dr. Voelcker's examination of our Fine Yellow Tobacco), and on the introduction of a new type, namely, Cigar Tobacco.

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PRESENTED BY

THE SOUTHERN FERTILIZING COMPANY,

RICHMOND, VA.

Clemmitt & Jones, Printers, Richmond, Va

## MEMORANDUM.

Now that the election is done, and the result declared, we can settle down to the sober routine of daily life, and, like earnest men, try to conquer a living from the times.

We, in Virginia, are specially blest in the immunity we have enjoyed from the tyranny under which our brethren in the Cotton States have for so many years groaned. Our recuperation though has been slow; the loss of eight hundred millions in property, and the taxable area covered by West Virginia, cannot be replaced at once. What has been accomplished, however, is no mean achievement, and taking heart from its contemplation, we will yet make Virginia, viewed in any way we like, a land of which our children may boast with an honest pride. The business of remoulding ourselves is a very hard one, but not too hard for men who are resolved to win.

That good people from abroad might be induced to share our fortunes, the State Board of Immigration last year took a step in the right direction when they issued that document ("*Virginia: A Summary*," &c.) setting forth the attractions of our State. This book has been given considerable publicity, especially in the British Isles; and we trust will be supplemented by the arrangement we urge in the pages following. We understand that inquiry concerning Virginia is very general in England, and we cannot too much rejoice at the prospect of a large influx of the blood and energy of that splendid people.

We will not cease to hope and strive, coveting ever the spirit of old PURCHAS, when he wrote: "I see many likely to be disheartened by the slender growth of the Virginia Plantation, which for the time might have been not only a safe but a blessed mother of a numerous and thriving generation, branching far into other colonies, and yet is! *I side no where, but entwine Virginia with a right heart, my pen directed, my hands erected, FOR HER GOOD.*"

SB273  
S78

WM. H. PALMER, *President.*  
JOHN ENDERS, *Vice-President.*  
JOHN OTT, *Secretary.*



Dr. W. H. TAYLOR, *Chemist.*  
*State Chemist and Assayer.*  
W. H. GILHAM, *Ass't Sec'y.*

THE SOUTHERN FERTILIZING COMPANY,  
*RICHMOND, Va., March 17, 1877.*

TO OUR FRIENDS:

As it was proper that our friends, engaged in the production of Tobacco, should know what was being done elsewhere in the world, in this direction, we took the trouble, year before last, to get together the data, in a compact shape, showing how much was grown in each country, what the character of the Tobacco was, how and where it was used, and the price it brought in the London market. The result of this exhibit indicated plainly the fact that unless the crop we grow commanded our best attention, and maintained a high standard of excellence in quality, we were by no means sure of a paying return for our labor. We saw, indeed, that, except the British Isles, and the most northerly part of the Continent, both in Europe and Asia, every people under the sun produced more or less of this crop; and also, that some of them were diligent in their efforts to improve its quality. Steam and the telegraph having made the world a close community, we cannot, in the face of the active competition such a condition of things both permits and invites, pursue our business with eyes closed to what other people are doing in the same line.

It will certainly not avail us to lay any particular stress on the production of low-grade Tobacco beyond what cannot be avoided; because there are too many people in the world who cannot raise anything else, and with whom we cannot compete on equal terms. East India Tobacco may be taken as an example, and Germany, a large customer of ours, has of late been buying a good deal of it. The export of Tobacco from British India (*British Board of Trade*), 1872-'3, was 17,789,577 pounds, value £134,331, or  $3\frac{1}{4}$  cents per pound; 1873-'74, 21,337,432 pounds, value £165,275, or  $3\frac{1}{10}$  cents per pound; and 1874-'5, 36,830,484 pounds, value £228,201, or  $3\frac{1}{10}$  cents per pound. From which we observe that the export more than doubled in three years, and that the price was exceedingly low.\*

\*In the "*Commercial Relations of the United States, 1875*," we notice the following report of the United States Consul at Gibraltar. It shows a very important outlet to India for her Tobacco, and should be of interest to us:

"On account of the high cost of Kentucky leaf Tobacco in the United States consequent on short crops, the importations in this class of Tobacco packed in hogsheads have some-

Australia (notably New South Wales and Victoria) is encouraging the production of this crop, and Australia has ever been a heavy customer of ours. In 1875, 679,649 pounds were grown in New South Wales, and 765,968 pounds in Victoria. The quality is poor, but the government is aiding the work by allowing a *bonus* to the manufacturer of domestic Tobacco not enjoyed by that imported. Of course, unless the quality of the home-grown Tobacco is improved so as to approach that imported, the *bonus* would avail nothing. To our knowledge, the Australian commissioner to the Philadelphia exhibition availed himself of all the information accessible in this country, about the cultivation and curing of Tobacco. We are shamed by the energy and enterprise of this new people (based too as it was originally on a colony of convicts.) That people have already achieved wonders,\* and

what diminished during the past year (1875), but the deficiency has been more than fully met by large and constant supplies of East India descriptions, imported direct from Calcutta by steamers. This India Tobacco now interferes considerably with the sale of low grades of Kentucky and Virginia leaf, since importers can afford to sell it at comparatively lower rates. It is evident that with the improved cultivation that is now being generally diffused for the growing of Tobacco throughout India, this branch of trade with European markets will increase in importance, and may in future seriously interfere with the prospects for the sale of American Tobacco, especially as regards the low or common grades of Kentucky and Virginia leaf. This India Tobacco is mostly used for chopping purposes, and answers well in the manufacture of cigarettes by mixing with other descriptions of Tobacco of higher grade and flavor. An active business has also been done in cigar cuttings (seed leaf) direct from the United States, as is proved by 3,425 cases having been landed here during the past year."

\*THE following official figures, from the *Statesman's Year Book*, London, 1875, speak louder than words of the progress of Australia. They show what can be done by men resolved to win. An export of \$60,000,000 worth of wool in a single year is no trifling matter:

Colonies.	1869.		1873.		Value of export of Wool year 1872.
	Imports.	Exports.	Imports	Exports.	
	£	£	£	£	£
New South Wales.....	7,700,743	7,577,724	11,688,388	11,815,829	3,342,900
New Zealand.....	4,976,126	4,224,860	6,241,062	5,521,800	2,069,980
Queensland.....	1,717,472	2,104,887	2,881,726	3,542,513	497,252
South Australia.....	2,754,770	2,993,035	3,829,836	4,587,859	1,186,745
Tasmania.....	75,412	826,932	1,107,137	893,556	279,194
Victoria.....	13,908,990	13,464,354	16,533,856	15,302,454	4,651,665
Western Australia.....	256,730	205,502	297,328	265,217	120,796
Total.....	32,290,243	31,397,294	41,979,357	41,929,228	12,148,532
Equal to.....	\$161,451,215	\$156,986,470	\$209,896,785	\$209,646,140	\$60,742,660

The United States Consul at Melbourne reports: "The spendthrift system of continuous grain growing is fast giving place to a rational course of husbandry, into which the breeding of sheep enters largely. The wool trade, formerly second to gold, is now first in impor-

are leaving no effort untried to induce immigration to their shores from all parts of the world, and what is more, are securing the immigrants. They are prepared to show samples of everything their country has to offer to help the fortunes of the new comers. We, in Virginia, happy beyond most peoples in the bounty of Nature, are, in respect of the development of our resources, but little ahead of the kingdom of Powhatan when Capt. John Smith made its acquaintance. Of what avail is this wealth if we neither use it ourselves, nor permit anybody else to use it? Can we expect people to take an interest in us if we take none in ourselves? Will merely talking about these resources ever develop them? We must show what we have, and show it in a way that people will understand it. We hold then that Virginia can make no possible investment that will bring better returns than the establishment at her capital of a museum exhibiting her resources, embracing not only what is buried in the ground, but what also grows out of the ground. It would cost very little to arrange and maintain such an establishment; and we do hope that, as poor as we are, the present Legislature will not adjourn without some action in this behalf. We want to extend our taxable area, first, that we may do something towards caring for our public obligations, and second, to relieve our unproductive lands of the burden they are now compelled to bear. Will not petitions go up from every county in the Commonwealth praying the Legislature to take this step? This is a measure of *true economy*; and that we must strive after if we are to get out of our troubles. Our sister State, North Carolina, is far in advance of us in enterprise. She has a museum at her capital, in charge of her own geologist, Prof. W. C. KERR, that would honor any State. There is found, properly arranged in glass cases, specimens of all the minerals of the State, their location given with extent and character of deposit; specimens of all the timber of the State, dressed and undressed; samples of her building stone; a complete collection of marls, with the analyses attached; a full assortment of the medicinal herbs and roots to be found within her borders; indeed, everything necessary to show to a stranger what North Carolina has to offer him to locate and invest his money there. Added to all this is a

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tance. It affords a permanent and secure occupation for the capitalists of the country. The climate of Australia is most favorable to sheep and cattle, which thrive wonderfully. It is especially suited for the merino sheep, which here attains its best development; consequently the wool produced has achieved a high standard of excellence, unsurpassed in any other part of the world. This is mainly due to the enterprise and judgment of flock owners, who have spared no cost to import and produce the most valuable sheep that can be had." The number of sheep in the colony of Victoria alone, was in 1875, 11,221,036. Does Virginia and North Carolina give no hope as a sheep-growing region? Is the lust for office still so strong in our leading men as to allow them to prevent the exercise of our energy in this direction, by a longer toleration of worthless dogs, mainly owned by hardly less worthless men, but men who have votes? This is a serious question; how will we answer it?

map of the State of enormous dimensions, showing the character of her soils, the location of her mines and forests, lines of transportation, market price of lands, &c. Should *we* have less? Tennessee, Kentucky, and Missouri, are amply provided for in this particular, and their respective bureaux are presided over by *Virginia-born men*, a compliment to us in one way, but a disgrace to us in another,—in this, that finding in their own State no demand for the exercise of their talents they were compelled to seek employment elsewhere, thus draining from the State the ability she so urgently needs to develop her own resources, and place her in the position the possession of these resources so eminently entitle her to occupy. Are we willing that this condition of affairs should continue? A man to fill such a position with credit can still be found within our borders,—can we afford to allow his acquirements to rust, or permit him, listening to more appreciative people elsewhere, to abandon his home? Let us think less of office-holding and more of building up the Commonwealth. It is the first duty of every man of us to do all in his power to improve the general interest; if that prospers he prospers of course. In this connection, how does the Tobacco interest fare? We have nothing whatever reliable showing the extent of our crop each year; what proportion the production of each particular type bears to the whole; how much enters our markets from other States; in few words, this great interest is allowed to go utterly at random, and the buyers being uncertain as to how they should proceed, the margin to cover the doubt must be provided by the seller. The person in charge of our museum could see also to our crop statistics, and thus save us from the mortification of being unable to answer the necessary questions that daily arise in the business of moving our crops.

Last year, we gave a historical account of Tobacco in Virginia, to show how, from the beginning, it has been the chief source of income to our people, and how that, through the means it provided, the Colony of Virginia very soon reached a commanding position, allowing as they did her sons to receive the benefit of ample culture in the best schools, and to dispense a hospitality only possible to long established countries, working in the regular way. The position Virginia held in the respect not only of the rest of this country, but throughout the world, was no mean boast. The war came to waste her fields and destroy her children, but the heritage of glorious manhood left by that struggle, makes her still rich, giving the boys who are now her hope strength to maintain her prestige; yea more, add to the lustre of her renown.

We propose now to present some general observations concerning this crop, in respect especially of the several types peculiar to our region, and ascertain, as far as may be, the points of encouragement the prospect has to show.

The country has made very slow progress, if any, in recovering from the panic of 1873. The wretched policy of the General Government has been



the chief cause of this tardy reaction looking to better times. It has been lawless and corrupt in the extreme; it has squandered the people's money with an *abandon* unprecedented in the history of the country; and its infamy has reached the climax in seating an unelected man in the chair of the Presidency. We, in the South, did all we could in voting for the man who represented the idea of relief from oppression; beyond this we were powerless to go. The new man has begun his career,—and his *promises*, as far as they affect us, are very satisfactory. Will they be realized in *his acts*? By these only are we to judge him; and if they are fair and generous, of course we will not fail to respond. Regard always begets regard, and oppression hatred. We are compelled to live under his rule,—and being so, will meet his friendly approaches to the fullest extent consistent with our self-respect and the maintenance of our principles.

At the last session of Congress, the friends of the Tobacco interest were not idle. The Committee, of which the Hon. JOHN RANDOLPH TUCKER, of Virginia, was chairman, presented an exhaustive report on the Tobacco Tax. They showed how the North and East, by securing the repeal of the income tax, and entire immunity from taxation in connection with their manufactures (whose name is legion), and on the United States bonds in which a large portion of their money was invested, had shifted the burden of sustaining the government almost entirely to the shoulders of the West and the Tobacco-growing States of the South.\*

\*We take the following tables from the Report of the Committee, that they may be perpetuated. They are an instructive lesson to our children:

States.	1867.	1875.
NORTHEASTERN STATES.		
Maine.....	\$2,326,380 90	\$107,476 15
New Hampshire.....	2,882,147 20	299,389 55
Vermont.....	986,279 35	58,582 18
Massachusetts.....	28,088,077 60	2,708,014 29
Rhode Island.....	5,049,974 00	231,978 00
Connecticut.....	7,582,970 57	627,717 96
Total.....	<u>\$46,915,829 42</u>	<u>\$4,033,155 13</u>
MIDDLE STATES.		
New York.....	58,825,159 06	15,238,881 81
New Jersey.....	7,890,202 61	2,363,469 41
Pennsylvania.....	27,580,633 30	6,157,960 04
Delaware.....	785,967 28	360,331 03
Total.....	<u>\$95,082,021 95</u>	<u>\$24,120,642 29</u>
NORTHWESTERN STATES.		
Ohio.....	19,902,527 66	14,662,720 17
Indiana.....	4,122,863 98	4,653,789 05
Illinois.....	12,112,985 84	17,634,626 71
Michigan.....	3,112,070 47	1,931,284 80

As showing the bearing of this tax, on both producer and consumer, we quote some extracts from the Committee's Report:

"In the case of tobacco, the range of prices for which is very great, the excise is the same for all. The lower-priced tobacco consumed by the poorer classes is, like the higher priced consumed by the rich, burdened with the excise of 24 cents. Without this tax the

States.	1867.	1872.
Wisconsin.....	2,513,025 41	2,722,076 75
Iowa.....	2,074,052 35	1,040,217 69
Minnesota.....	452,104 42	228,362 45
Kansas.....	367,543 10	133,685 86
Nebraska.....	107,075 34	292,472 30
Montana.....	77,431 14	23,666 10
Dakota.....	1,900 02	10,040 18
Colorado.....	151,686 51	70,531 82
Arizona.....	2,665 23	10,263 06
Idaho.....	81,236 90	19,136 00
Utah.....	64,296 34	31,899 68
Wyoming.....	—	11,942 11
Total.....	<u>\$43,144,364 71</u>	<u>\$43,476,694 73</u>

#### SOUTH MIDDLE STATES.

Maryland.....	6,162,177 85	2,760,736 57
Virginia.....	1,966,732 02	7,660,921 20
West Virginia.....	944,524 41	508,868 20
North Carolina.....	1,648,752 35	1,630,423 58
Kentucky.....	5,415,134 02	9,025,587 88
Missouri.....	6,494,095 53	4,594,875 31
Total.....	<u>\$22,631,406 18</u>	<u>\$26,181,412 74</u>

#### SOUTH COTTON STATES.\*

South Carolina.....	1,816,894 21	122,277 92
Georgia.....	4,487,440 90	388,226 84
Florida.....	557,988 56	184,777 59
Alabama.....	4,119,130 23	115,689 37
Mississippi.....	4,583,182 77	96,967 92
Louisiana.....	6,226,787 86	606,264 38
Texas.....	3,211,863 59	258,243 29
Arkansas.....	1,752,157 18	75,517 44
Tennessee.....	3,349,459 51	861,645 28
Total.....	<u>\$30,104,904 81</u>	<u>\$2,709,524 03</u>

#### PACIFIC STATES AND TERRITORY.

California.....	6,757,131 69	2,988,033 26
Oregon.....	351,450 16	47,939 64
Nevada.....	290,174 24	58,803 30
Washington Territory.....	78,911 80	21,146 60
Total.....	<u>\$7,477,667 89</u>	<u>\$3,115,922 80</u>

This result needs to be corrected by reference to the fact that the whole internal revenue

\* The great falling off in the Cotton States is due to the repeal of the cotton tax.

laborer may buy for smoking or chewing an article at the price of say 6 cents. The excise raises it to 30 cents, a tax of 400 per cent. The Commissioner of Internal Revenue estimates the average consumption to be 15 pounds of manufactured tobacco to each consumer, and 246 cigars, which represents about 6 pounds, or 21 pounds in all, valued at \$1.26. Thus the price to the consumer of this lower priced tobacco would be raised by the excise from \$1.26 to \$6.30 per annum; or he would pay \$5.04 tax for his consumption of tobacco worth \$1.26. And when it is remembered that the mass of the laboring men of the country use this article, it will be seen how burdensome upon labor is this tax upon a simple article of those so-called luxuries which he is able to enjoy.

"On the other hand, the higher priced article, say worth 20 cents a pound, is taxed the same, 24 cents per pound, or 120 per cent.; in the aggregate only the same total tax of \$5.04 per pound. The tax on the poor and the rich is alike, with this marked difference: that the poor pays the same tax for the most inferior article that the rich does for the best; in other words, the laborer pays 30 cents per pound for an inferior tobacco under the tax, when, without the tax, he could buy for two-thirds that price the very best quality of tobacco.

"Such a rate of tax must decrease consumption and must diminish production; or, as consumption would decrease at an enhanced price, the producer must lower his price to induce the same quantum of consumption. Thus this heavy excise must tax consumer and producer, and will especially operate upon the producers of the lower grades of tobacco.

"But tobacco is a staple with which the producer buys the necessities of his daily life, and which, if to be restricted by the device of excise, because a hurtful luxury to the consumer, will deprive the country of an important source of wealth, decrease the value of lands in many of the States, and ruin many of their citizens. The Government should not, if it had the power, and cannot, because it has not, pervert a revenue power into an instrument for striking down an industry which for more than two hundred and fifty years has been a prime source of wealth to the Southern States, and is now to many of the Western States, and which in all the States is the source of employment in manufacturing industry to thousands of laboring men, who ask and receive no bounties, but only ask not to be destroyed by taxation.

"The heavy tax leads to exportation of the leaf tobacco, to escape it, and drives manufacturing industry out of this country to others where it is not so burdened. For to manufacture for export is almost out of the question. Production of the leaf will be decreased. More will be consumed by the producer without sale for manufacture. And fraud on the revenue is the ready resource of unscrupulous traders to avoid an onerous tax, and to enable him to reap, in competition with the honest trader, the amount of revenue he takes from the Government.

"A wise and just policy will seek to ascertain the lowest and not the highest excise which will secure the desired quantum of revenue. To select the higher when the lower

in 1867 was \$248,124,761.23; in 1875, \$103,771,664.60, or in the last year it was only as, say, 104 to 248, or as 13 to 31. Thus rectified, we would have this result, approximately:

	1867.	Actual in 1875.	Proper proportion in 1875.
Northeastern States.....	\$46,915,829 42	\$ 4,003,155 13	\$19,674,380
Middle States,.....	95,082,021 95	24,120,642 29	39,808,589
Northwestern States.....	45,144,364 71	43,476,694 73	18,931,507
South Middle States.....	22,631,406 18	26,181,412 74	9,490,587
South Cotton States.....	30,104,904 81	2,587,246 11	12,624,637
Pacific States.....	7,477,667 89	3,115,922 80	3,135,796

will secure the same revenue under each, is to tax the producer through the consumer, unduly and unjustly, to the detriment of the industry employed in production."

The following, extracted from the evidence given before the Committee by prominent manufacturers, is pleasant reading to a people who have a right to expect their public burdens to be equally distributed :

Mr. SPENCE: There is a large amount of low-grade smoking Tobacco raised in all Tobacco districts, and were this tax reduced, for instance from twenty-four to sixteen cents, it would add probably three dollars a hundred additional value to all that Tobacco.

Mr. TUCKER: To the producer?

Mr. SPENCE: To the producer. Now there is no market for it; he can't sell it because this tax is really repelling our manufacture—it is extinguishing it. You know a process of that kind once fairly under headway often goes on with great celerity. It is a thing which has already commenced.

Mr. TUCKER: Then the effect will ultimately be that Tobacco will be the luxury of the rich, and the poor will be debarred from it?

Mr. SPENCE: Yes, sir; and it will cease to be an article of commerce.

Mr. CATLIN: The present high rate of tax is driving the low-grades of Tobacco out of the market. The producer can't dispose of it at any price.

This presents of itself a good reason why the proportion of low-grades should be restricted as much as possible; certainly as long as this tax bears with the severity it does now.

Whether Congress will listen to these appeals, and provide the remedy remains to be seen. Of this we may rest assured, however, that the friends of this great interest in that body will leave no effort untried to secure relief from this most unjust and ruinous discrimination.

Referring to our *heavy shipping Tobacco*, we find statements of similar import to the following constantly occurring in Tobacco circulars from abroad: "Manufacturers have satisfied themselves that large aggregate stocks do not always insure a plentiful supply of *desirable Tobacco*." When we consider that our "fine qualities (to use the words of the best posted Tobacco man in the London market,) cannot be dispensed with," we certainly have reason to try, in our production, to secure the largest proportion possible of fine quality. With so much of our crop now in the hands of negroes, as tenant farmers, the market is bound to show a very considerable quantity of indifferent Tobacco, but the white men, whether large or small farmers, having the requisite intelligence and skill, have it in their power, the season at all favoring, to bring a handsome result. It is then, not the largest number of pounds that will command the most money, but the pounds of good quality. In the cultivation of heavy Tobaccos, no concentrated manure should be used as a *substitute* for the manures produced on the place; it is always found that the best result is obtained, both in weight and quality, when these manures are used *in conjunction*. Each adds to the value of the other, fulfilling every requisite, whether chemical or mechanical, demanded by the

crop. [It is a source of great pleasure to us to note the more general spread of inquiry for information concerning their calling, among the farming community, than used to prevail. It would be a shame if our people refused to avail themselves of the researches, bearing on soils and plants, now in progress so generally throughout the thickly peopled portions of the earth. The results of these researches are accessible to every man, and the better and more economical management they indicate, becomes a portion of the farmer's capital. The man is not wise who is content to profit by his own experience alone; he is wise if he adds to it the experience of everybody else.] We have much land in the State where only heavy shipping Tobacco can be grown. The west, (especially Tennessee and Kentucky,) being unable, years ago, to compete with our product of this type, have improved the quality of their growth, and now, with not a few European buyers, it is preferred to much of ours. Now, we must hold our own. While it may be urged, and justly too, that the labor at our command is not reliable, still we should be able to select enough that was good to enable us to effect our ends. The experience of Maj. R. L. RAGLAND, of Halifax, and Mr. J. G. TINSLEY, of Hanover, published in the *Planter and Farmer*, should be of value generally in this direction. A smaller area, well tended and managed, the proprietor giving it the same close attention a city man habitually gives to his business, will, assuming seasons to be reasonably propitious, hardly fail to show a result on the right side of the account. A very intelligent tobacco grower from Europe spent some two years in Virginia, since the war, and, when he was about to leave for home, honored us with a visit. We asked him for his unreserved opinion of our people, when he answered, "Circumstanced as you all are, the farmer in Virginia must be his own overseer. Few peoples are as well off as you are in natural advantages, and it is largely your own fault if you do not make them available." We could not gainsay his opinion, knowing that where there is a will there is generally a way, and what had been accomplished the world over by men who were *determined* to succeed. The location and conformation of Virginia, her ready accessibility to all the rest of the world, her manifold productions—both mineral and vegetable, her power ready-made to utilize them, all point to a community able to develop a harmonious whole, and secure a prosperity vouchsafed to few countries in this world. If we never try we certainly will never win.

Conferring, as we have, with the heaviest shippers abroad of our Tobacco, we learn this: *Virginia is compelled to give more attention to the production of fine Tobacco, or she cannot maintain herself in the markets of the world.* Taking their judgment with that of the Tobacco-men in Europe, and our course is plain. Will we not do our best to meet this demand? The stocks of American Tobacco of this sort held throughout the world are not exces-

sive; \* but too small a proportion of this Tobacco is of a desirable character. We have heard much of Hungary, but on good Tobaccos we have very little to fear there; she has indeed none to spare. In the Austrian Empire there was grown in 1873, 604,000 Vienna centner (123½ pounds), or 74,594,000 pounds; in 1874, 513,000 centner, or 63,355,500 pounds. Of these crops, Hungary produced, in 1873, 430,000 centner, and in 1874, 424,000 centner. With such large crops, the Austrian Empire imported, in 1874, Tobacco (561,510 centner) valued at 39,756,400 florins, exporting only 3,781,620 florins' worth. In the half-year ending June 30, 1875 (the date of the last official advices accessible), she imported to the value of 18,821,560 florins, and exported but 1,879,940 florins' worth. Germany too imports as much as she grows. Against our low-grades, the world at large can furnish substitutes enough, and at prices that drive us from the market; *for our fine-grades there is no substitute.* We are unwise then if we do not profit by this advantage.

The chief position has always been given to our shipping Tobacco because Virginia Tobaccos originally were all shipped.† As time passed, the home

\*The following, from the Tobacco Circular of R. L. MAITLAND & Co., of New York, March 1, will show the stocks on hand as reported to that date:

	1877.	1876.	1875.	1874.	1873.
	hhds.	hhds.	hhds.	hhds.	hhds.
New York, February 28th.....	18,162	20,530	42,254	10,282	7,153
Baltimore, " 24th.....	10,711	10,925	12,082	11,154	7,720
New Orleans, " 24th.....	7,279	3,903	4,250	4,949	1,034
Liverpool, " 1st.....	35,000	26,192	32,873	27,667	16,891
London, " 1st.....	17,293	13,500	17,510	15,415	13,547
Bremen, " 1st.....	8,161	3,637	2,350	4,857	1,981
	96,606	78,687	111,319	74,324	48,326

†As showing an item in the Tobacco operations of "old times," we present the following Table of Exports from Virginia, from 1745 to 1756. It will be observed how entirely the product was confined to the Tide-water country. These figures are gotten from "*The Fairfaxes of England and America in the 17th and 18th Centuries* :

*TOBACCO exported from Virginia from 1745 to 1756.*

EXPORTS.	1745.	1746.	1747.	1748.	1749.	1750.	1751.	1752.	1753.	1754.	1755.	1756.
Upper district of James River,	10,991	10,799	9,355	12,489	11,509	12,974	10,858	13,530	18,830	13,900	13,739	7,262
Lower district of James River,	1,381	1,372	1,718	3,170	3,150	2,218	2,525	1,423	2,113	1,181	918	1,096
York River, . . .	11,118	11,015	12,895	11,089	10,970	13,802	12,054	12,623	15,127	14,878	15,344	6,918
Rappahannock, . . .	12,332	10,745	12,132	13,052	15,012	14,331	13,553	14,299	16,815	13,512	11,963	8,531
South Potomac, . . .	6,659	6,311	5,704	6,983	7,346	5,242	7,713	6,505	6,959	7,332	5,723	4,645
Accomack, . . .	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....
Accomack, 11 bbls. in 1755-6.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hogsheads—Total, . .	42,481	40,242	41,804	46,783	47,987	48,567	46,703	48,380	59,847	50,803	47,687	28,452

consumption confined itself largely to the "sweet-scented" *sun-cured Tobacco* produced north of the James River. This fine type, known in the trade as "*manufacturing*," is now grown mainly in Louisa, Caroline, King William, Spotsylvania, and portions of Essex, Goochland and Fluvanna. It furnishes the stock for all the finest brands of chewing Tobacco produced by our factories; and what is more, except in a few spots elsewhere in the State, is without a competitor. This type of Tobacco does not require the same proportion of gross manures, in its production of fine quality, as our heavy shipping,—but these manures should not be neglected. Next to proper size and body, in this type of Tobacco, we are assured by the manufacturers who purchase it in largest quantity, that to bring "the top of the market," it must be indeed *sun-cured*, and not air-cured, or dried out in the barn. With the immunity from competition enjoyed by this favored region what is to prevent its advance? The demand takes all now produced, and will take more if it is to be had of a quality to suit; and, unless the season is exceptionally bad, this element of the question is entirely within the control of the grower. We urge then upon our friends there the best work in their power, knowing that this work, well directed, will not be in vain.

The next type, and belonging by distinction to Virginia and North Carolina, is the *bright yellow*, used for smoking and plug wrappers. This Tobacco is peculiarly adapted to the light gray soils of lower Virginia and upper and western North Carolina. In its cultivation gross manures are not desirable, as delicacy of texture and high color are indispensable to secure fine prices. The production has increased enormously, a steady demand existing, at good prices, for all that is grown. Through the handling of this Tobacco, Danville and Durham owe their wonderful growth since the war. The transactions (in this Tobacco almost exclusively) at Danville, during the year ending September 30, 1876, reached 23,466,413 pounds. Proper machinery has been contrived to shred this Tobacco so as to render it serviceable in the production of cigarettes. Much has been said of the Russian cigarettes, made from Turkish Tobacco; but we are persuaded that when our fine yellow has time to become generally known it will supplant all others for this purpose. Already large factories in this country are engaged in their production, and the favor with which they are received induces the belief that they will enter largely into the consumption of Europe as well as of the United States. Wishing to get the opinion, on this Tobacco, of one of the most distinguished chemical authorities in the world, and believing that nothing could prove more interesting to the planters who produced it, we submitted last year, a large assortment of samples to Dr. AUGUSTUS VOELCKER, F. R. S., Consulting Chemist to the Royal Agricultural Society of England. The Doctor gave the matter a very thorough examination, and submitted to us the results he obtained. They will be found in the following communication. It will be observed that this Tobacco has

two points that must commend it to universal use: first, in respect of its healthfulness, the extremely small percentage of nicotine it contains,—and, second, in respect of comfort and pleasure in its use, the almost entire absence of nitrates. It must prove to be a matter of great gratification to our people in the bright Tobacco country to know thus fully the value of “this magnificent Tobacco”:

ANALYTICAL LABORATORY, 11 Salisbury Square, Fleet Street, E. C.,

London, December 7, 1876.

Mr. JOHN OTT, Secretary, &c., Richmond, Va.,

*My Dear Sir:*—You will remember having sent me, some time ago, a packet of Tobacco leaf, labelled “Fancy Bright Tobacco, from Granville county, North Carolina,” which you desired me to analyse. I have now completed the examination, and have much pleasure in handing you the results obtained, both in the analysis of the organic and the inorganic parts of this magnificent Tobacco. The dried leaf, when analysed, had the following general composition:

Moisture.. .. .	14.68
Organic matter.... .	72.07
Mineral matter (ash).....	13.25
	<hr/>
	100.00

In comparing this general statement with the results which Prof. JOHNSON, of Yale college,\* obtained some years ago, in the examination of a specimen of Fancy Bright Tobacco,

\*The following table will show the analysis (No. 13) to which Dr. VOELCKER refers. Prof. JOHNSON being engaged in the examination of Tobacco for the Connecticut State Board of Agriculture, this Company furnished him samples showing all the types peculiar to Virginia and North Carolina. Of these, he analysed the sample of “fancy bright,” raised by Mr. E. E. Lyon, of Granville county, N. C. On the receipt of the above communication from Dr. VOELCKER, we submitted it at once to Prof. JOHNSON, who, but for very infirm health, would have furnished us with a paper on the subject. The first twelve analyses are of Cigar (seed leaf) Tobacco, and will be interesting considered in connection with the matter of Cigar Tobacco, treated elsewhere in this document:

TOBACCO LEAF.				Silica.	Chlorine.	Sulphuric acid.	Phosphoric acid.	Lime.	Magnesia.	Potash.	Soda.	Sum of ash ingredients.	Organic matter, sand and nitric acid.	Nitrogen.	
(When and where raised.)															
1. Crop 1871.	H. S. Porter, Mass.....	0.21	0.87	1.21	0.47	6.48	1.31	3.90	1.81	16.26	83.74				
2. Crop 1871.	J. M. Smith, Mass.....	0.19	1.35	1.46	0.52	8.23	1.24	4.53	0.37	17.88	82.02				
3. Crop 1871.	H. L. Loomis, Mass.....	0.30	0.12	0.99	0.80	3.17	1.01	7.45	0.29	14.13	85.87				
4. Crop 1871.	Alden Smith, Conn.....	0.12	2.50	1.69	0.58	3.61	1.13	6.43	9.34	16.45	83.55				
5. Crop 1871.	Levi Wells, Conn.....	0.19	1.47	0.74	0.60	6.70	2.21	4.79	0.20	16.90	83.10				
6. Crop 1872.	Levi Wells, Conn.....	0.05	1.58	1.06	0.64	6.14	1.74	5.49	0.08	16.78	83.22	5.11			
7. Crop 1872.	J. P. Brewster, Conn.....	0.11	2.06	1.38	0.50	7.03	1.77	4.82	0.18	17.85	82.15	3.78			
8. Crop 1872.	W. D. Hall, Conn.....	0.12	0.08	1.18	0.64	4.21	1.04	4.93	0.12	12.32	87.68	3.20			
9. Crop 1872.	H. O. Warner, Conn.....	0.11	2.49	0.98	0.75	5.11	0.94	7.03	0.19	17.60	82.40	4.42			
10. Crop 1872.	H. O. Warner, Conn.....	0.07	0.84	0.84	0.48	6.06	1.01	6.53	0.10	15.93	84.07	4.32			
11. Crop 1872.	Dr. Riggs, Conn.....	0.08	2.55	1.07	0.62	6.38	1.51	7.01	0.18	19.40	80.60	3.89			
12. Crop 1872.	J. H. Hinman, Conn.....	0.09	2.52	0.52	0.58	5.41	1.41	6.68	0.11	17.32	82.68	4.93			
13. Crop 1872.	E. E. Lyon, Granville Co., N. C.	0.12	0.20	0.36	0.73	2.44	1.05	3.54	0.09	8.53	91.47	2.83			
Average of the New England Tobaccos.....			0.14	1.55	1.09	0.59	5.71	1.36	5.79	0.33	16.56	83.44	4.24		
Average of 30 varieties (28 from Kentucky) analysed by Dr. Peter.....			0.35	0.48	0.54	0.64	4.53	1.20	4.82	0.27	12.83	87.17			
LEAF AND STALK—analysed by Dr. C. T. Jackson, 1855.....															
W. H. Dickinson, Mass. Leaf.....			?	0.32	0.52	1.44	4.87	0.30	3.86	1.14	12.45	87.55			
W. H. Dickinson, Mass. Stalk.....			0.04	0.32	0.22	1.33	1.37	0.30	4.29	0.98	8.63	91.37	3.00		



from Granville county, N. C., you will notice that whilst the Professor found only 8.53 per cent. of ash, the sample you sent me contained 13.25 per cent. Now, whilst I do not doubt, for a moment, the correctness of Prof. Johnson's determination, I may be allowed to say that 8½ per cent. is an exceptionally low per centage of mineral matter in Tobacco leaves; for, in all the recorded analyses of Tobacco, which I could lay hold of,—analyses made in your country as well as in others made on the Continent, I do not find any other specimen which yielded as little as 8½ per cent. of ash, and the per centage which I obtained in the sample you sent me agrees better with the average amount of mineral matter in Tobacco. The proportion of ash constituents in Tobacco, however, I find varies considerably, and usually amounts to over 12 per cent., and in some instances reaches to 20 per cent. in round numbers.

I have made a complete analysis of the ash of the sample you sent me, and embody the results in the following tabulated statement showing the—

*Composition of the Mineral portion (ash) of a sample of Fancy Bright Tobacco, grown in Granville county, N. C., and sent to Dr. Voelcker, by Mr. John Ott, Secretary, &c. of Richmond:*

Lime.....	23.39
Magnesia.....	4.05
Oxide of Iron.....	.81
Potash.....	18.55
Chloride of Potassium.....	5.82
Chloride of Sodium.....	7.17
Phosphoric Acid.....	3.36
Sulphuric Acid.....	3.37
Soluble Silica.....	13.80
Fine Sand.....	5.72
Carbonic Acid and Loss.....	13.96
	<hr/>
	100.00

Deducting Sand and Carbonic Acid, and the composition of the pure Tobacco is as follows:

Lime.....	29.12
Magnesia.....	5.04
Oxide of Iron.....	1.01
Potash.....	23.09
Chloride of Potassium.....	7.25
Chloride of Sodium.....	8.93
Phosphoric Acid.....	4.18
Sulphuric Acid.....	4.19
Soluble Silica.....	17.19
	<hr/>
	100.00

I find merely traces of nitrates in the Fancy Bright Tobacco, which, perhaps, is one of the reasons why this Tobacco has a very mild taste; for, in all biting, strong Tobaccos, I find invariably nitrates are present in considerable proportions.

Another, and still more important fact, which my investigation has brought to light, is that the Granville county Tobacco you sent me contains little nicotine, which I am inclined to regard as a good feature of this kind of Tobacco. In coarse, strong Tobaccos, notably the inferior Tobaccos grown in the Palatinate (Bavaria), and some of the coarse (highly manured) Virginia Tobaccos, they are found to contain much more nicotine, some as high as three or four times as much as I find in the "Fancy Bright."

*The following table shows the detailed composition of the sample of Fancy Bright Granville county Tobacco, sent by Mr. John Ott, Secretary, &c., and analysed by Dr. Voelcker:*

Moisture.....	14.68
*Gum, extractive matters and other substances, soluble in water.....	36.17
Mineral matters, soluble in water.....	8.92
Nicotine .....	1.37
Resinous compounds, Oil and other constituents, soluble in ether and alcohol.....	6.68
† { Digestible woody fibre.....	14.43
{ Indigestible woody fibre (pure cellulose).....	12.42
{ Mineral matter, insoluble in water.....	4.33 = 32.18
	<hr/>
	100.00
	<hr/>
*Containing Nitrogen.....	.47
†Nitrogen in portion insoluble in water.....	.44
	<hr/>
Total percentage of Nitrogen.....	.91

In other recorded Tobacco analyses, I find the proportion of nitrogen is given much higher; and for this reason I was particularly anxious to verify my results by repeated determinations, which closely agreed in the second decimals, and leave no doubt in my mind that the Fancy Bright Granville Tobacco contains a comparatively very small amount of nitrogenous (albuminous) compounds. Perhaps, this explains the delicate flavor of the Tobacco smoke of this kind of Tobacco; for it is well known that albuminous and other nitrogenous compounds, when largely present in materials submitted to dry distillation (and smoking is a familiar illustration of destructive dry distillation) give off disagreeable-smelling ammoniacal vapours, reminding one more or less of singed feathers or burnt horn. Be this as it may, the Fancy Bright Granville county Tobacco certainly is one of the finest flavoured, mild Tobaccos I ever smoked, and it is certainly a fact that it is poor both in nicotine and albuminous compounds, which I am inclined to regard as a good and distinguishing characteristic of delicate flavored mild Tobaccos.

How variable the proportions of nitrogen and ash are in Tobacco, you will notice in the following determinations which I made of three other samples of (prepared) Tobacco which you kindly sent me:

*Percentage of Nitrogen and Ash in three specimens of Tobacco, dried at 212° Fahrenheit.*

	Percentage of Nitrogen.	Percentage of Ash.
"Lone Jack" Tobacco.....	1.65	14.93
"Perfection Straight Cut Matchless Cavendish," prepared by John F. Allen & Co., Richmond.....	1.68	16.48
Louisiana "Perique" Tobacco, grown in St. James Parish (crop of 1872)..	3.04	20.55

You will observe that the strong Perique Tobacco is much richer in nitrogen and ash than the two milder kinds.

Of course, I merely throw out, by way of suggestion, that delicate flavoured mild Tobacco is likely to be found always poor in nitrogen. An extended series of analyses alone would be required to establish this point. If my engagements permitted it, I should feel much interested in following up this line of investigation, but I have my hands so full of work, and the subject of Tobacco growth is of no immediate interest to British agriculturists, that I am obliged to leave so important and interesting a work as that of a thorough Tobacco investigation to others more favourably situated than I am.

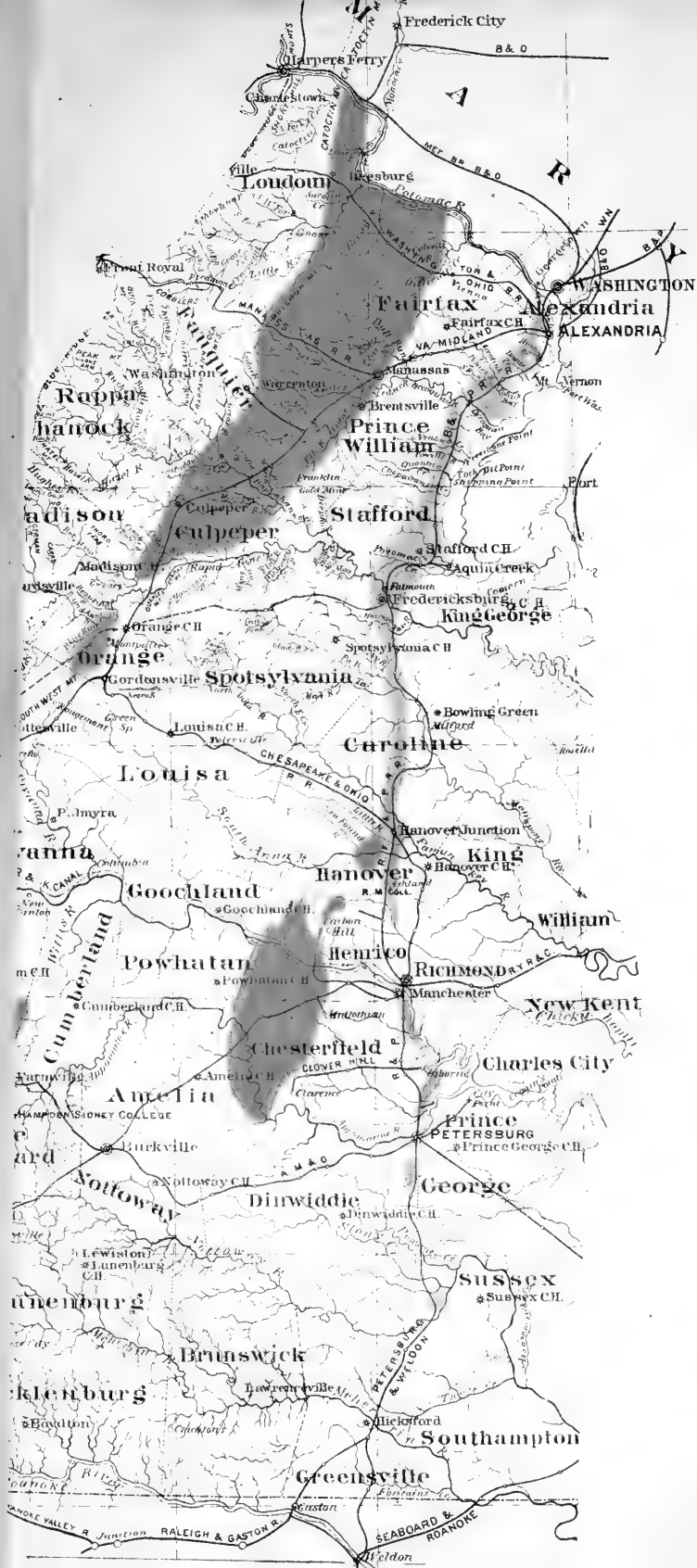
Believe me, my dear sir, yours faithfully,  
(Signed)

AUGUSTUS VOELCKER.

*MAP*  
*Showing the Location*  
*OF THE*  
*Jurassic and Triassic Rocks*  
*in Virginia*  
*By Jed. Hotchkiss T.E.*  
*1877.*

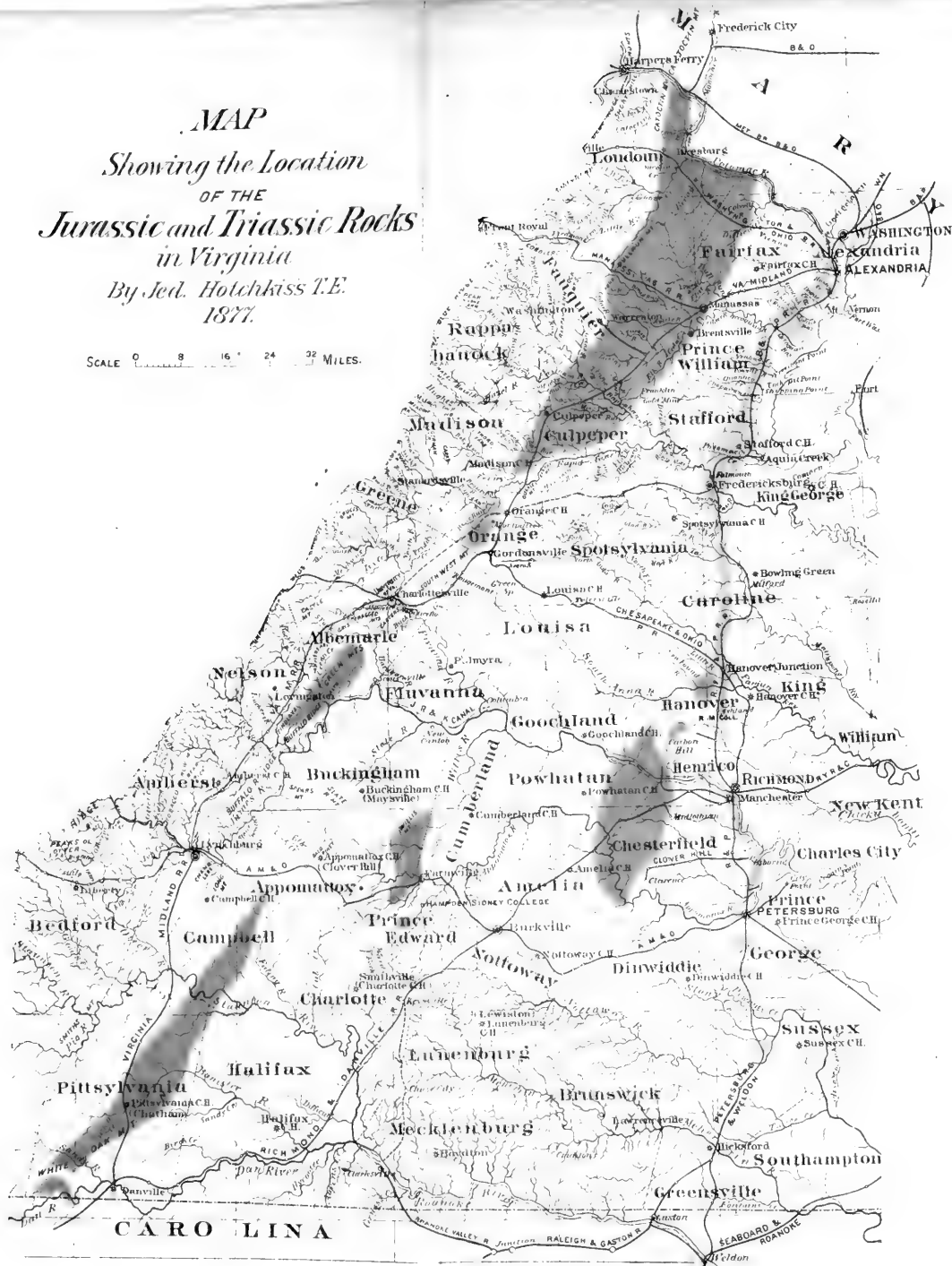
SCALE 0 8 16 24 32 MILES.





**MAP**  
*Showing the Location*  
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 in Virginia  
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 1877.

SCALE 0 8 16 24 32 MILES.





## CIGAR TOBACCO.

If, as in old times, the bulk of our Tobacco production was confined to "heavy shipping," we in Virginia, would fare badly indeed in the face of the competition of Kentucky and Tennessee, producing as they do so abundantly of this particular type. We are happy then in the diversity that now prevails in the character of the Tobacco we grow. We have three distinct types; why may we not have a fourth, namely, *Cigar Tobacco*? The more numerous our types, consistent with proper attention to crops of subsistence, and a demand existing for the product, the more certain the grower of each is of a paying return for his crop. Whether from our central location, or other cause, it is a fact that of the three types we already grow, no other portion of the country can produce them of such *quality* as we can, save in the matter of "fancy bright," where North Carolina stands unexcelled.

We see, referring to Cigar Tobacco, what has been accomplished as far north as New England, in the production of this Tobacco, and how, under a lower latitude (in Lancaster county, Pennsylvania), the quality has been improved. Should not a still lower latitude improve still more its quality? Indeed, in this, as in other vegetable products, the soils favoring, the flavor becomes more pronounced in proportion as we approach the equator. In Florida,\* there is produced a very fine leaf for cigars, and between 10° and 30° north latitude we see it in perfection, namely, in Cuba and the Philippine Islands.

We have had this matter of Cigar Tobacco in our mind for several years past, and believe the day has come when we may, with propriety, propose its consideration in a definite shape to our friends; and to indicate the localities in the State where, considering the character of the soils on which New England and Pennsylvania "seed leaf" is grown, it is believed it will reach the greatest perfection, we sought the good offices of Maj. JED. HOTCHKISS, Topographical Engineer, Staunton, Va., in the preparation of a map and description of these localities. The map is submitted herewith, and the description contained in the following communication. We are in corres-

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\*The following communication, relative to Florida Tobacco, was received by the *United States Commissioner of Agriculture*:—

"The Gadsden 'wrapper-leaf' was always in high repute, and extensively used in the manufacture of cigars, being in size, fineness and texture fully equal to the best Cuba, and far superior to the Connecticut seed leaf. Where the variety known as the Cuba-filler has been tried, it has succeeded finely in this county. We need but the capital to manufacture our Tobacco into cigars (thus affording us a home market for the raw material) to make the cultivation of it the most profitable crop that is grown. It is a singular fact, but nevertheless true, that of all the counties of the State, many of them abounding in the very finest soil, Gadsden is the only one that has succeeded in making the Cuba Tobacco a staple market crop. Prior to 1860 it rivaled in net returns the great staple—Cotton. Whether this success is attributable to any peculiarity in the elements of the soil I am not able to determine, but this fact is worthy of note, that, except immediately on the banks of the Apalachicola River, which forms the western boundary of the county, there is an entire absence of the rotten limestone which so largely pervades the other sections of the State. In 1872 a citizen of this county cleared one acre of good pine land, and after breaking it up, and applying \$8 worth of commercial fertilizer in the hills, planted it in Cuba Tobacco. The crop was sent to New York, and the net returns of sale amounted to \$320.90. In 1873 he added another acre, making two acres, and planted it again in Tobacco. The crop of two acres was sold in New York, and netted \$760. The two acres in Tobacco did not interfere with the making of an abundant supply of provisions, and the usual amount of cotton for market."

pondence with Prof. KERR, State Geologist of North Carolina, for a similar map in connection with that State, which we expect to have the pleasure of presenting in a future publication.\*

STAUNTON, Va., March 15, 1877.

Mr. JOHN OTT, *Secretary, &c.* :

*My Dear Sir:*—Knowing that the famous “seed-leaf” (Cigar) tobacco of the Connecticut valley is grown on the soils overlying the Triassic, or New Red Sandstone, rocks, as, also, in Lancaster county, Pennsylvania, it has often occurred to me that a similar valuable “leaf” might be reared upon the same formation in Virginia, where these rocks cover an area of about 1,600 square miles. I am accordingly much gratified to hear that you have taken the subject of “seed-leaf” tobacco in hand, and I feel great pleasure in complying with your request for a map and a brief description of this, and the associated formation in Virginia, to accompany your paper.

The formations shown on the map herewith (as located by Prof. WM. B. ROGERS) are: 1. *The Lower Jurassiac, passing down into the Triassic*, colored in a dark brown; and, 2. *The Upper Jurassiac, passing into the base of the Cretaceous*, colored in a light brown. These rocks, as found in Virginia, are distributed in some four lines of broken strips, extending nearly across the State from north east to south-west, and they do not conform in position to the rocks that are beneath them.

#### I.—THE LOWER JURASSIC ROCKS.

These are found in eight or more distinct basins. The *first* rests on the Potomac, and extends through Loudoun, Fairfax, Prince William, Fauquier and Culpeper to the Rapidan. Its area is about 1,000 square miles. The *second* is an oval area, in Madison and Orange, west of Orange Court house,—part of the fine country watered by Blue run. The *third* is north west of the James, in Albemarle and Nelson, intersected by Rockfish river, and embracing the slope of the Green mountain and Buffalo ridge. The *fourth* begins in Appomattox and runs through Campbell and Pittsylvania counties, crossing a corner of Halifax to the North Carolina line, with a break in it a few miles north of that line. The *fifth* (small) is found near the middle of Prince Edward. The *sixth* begins in the south-east corner of Buckingham and extends into Cumberland and Prince Edward, including the fine planting lands on the Appomattox in the vicinity of Farmville and along the western side of Willis's river. The *seventh* is the region familiarly known as the Richmond coal-field, and extends through Henrico and Chesterfield, from the sources of the Chickahominy to the Appomattox. The *eighth* is a detached fragment, in Hanover county, intersected by the South Anna, near Taylortown. The entire area of these eight basins is not far from 1,600 square miles.

The following analysis of these rocks, as found in New Jersey, will give some idea of their constituent elements:

Silicic acid and quartz.....	73.00
Peroxide of iron.....	10.00
Alumina .....	3.20
Lime.....	4.93
Magnesia.....	0.90
Potash .....	0.73
Soda.....	0.97
Sulphuric acid.....	a trace.
Water.....	1.00

\*We esteem Virginia and North Carolina highly favored in this: Each has a man not only thoroughly acquainted with the resources of his State, but imbued with a spirit and energy becoming men who appreciate the tremendous importance that attaches to such knowledge, when the best interests of the Commonwealth, possessing these resources, are considered. We know how rare this knowledge is, and cannot too much value the men who have devoted their lives to its acquisition. North Carolina has Prof. KERR, and Virginia Maj. HORTONKISS.



## II.—THE UPPER JURASSIC ROCKS.

They are found in some four detached fragments on the James, Appomattox, Blackwater and Nottoway, south of Richmond, and their characteristic features are well shown at Drewry's bluff. North of Richmond they occupy a long and irregular belt of country, extending from near Richmond, through Henrico, Hanover, Caroline, Spotsylvania, Stafford, Prince William, Fairfax and Alexandria to the vicinity of Washington city. The railway from Richmond to Washington runs in or near this belt all the way between these cities. There are many noted estates in this belt, including the historic ones of Gunston Hall, Mt. Vernon and Arlington. Some detached masses of these rocks are found scattered over portions of Tide-water to the east of where the formations are in place. It is generally believed that the areas now occupied by these rocks were once depressions or foldings in the granitic (Archaean or Primary) rocks, that were inlets of the sea, estuaries of rivers, lakes or marshes, often of great depth, that were gradually filled up by the washings from the hills of the surrounding country. The washings that filled these depressions in Virginia, and consolidated into the Jurassic and Triassic rocks, as in New England, were from the older crystalline rocks: the granite, gneiss, mica and talcose schists, and even from the limestones of the valley; hence, it is not surprising that the lands of this formation are unusually fertile. An abundant vegetation, including extensive forests, covered the hills around these lakes and rivers, in which grew not only gigantic ferns and other coal plants, but also trees of the pine family, which at times were swept into these depressions and formed beds of coal, as in the Richmond, Farmville and Dan River basins.

Not only are the remains of vegetation found abundantly in these rocks, but on the surface of some of the layers of red sandstone, shale, conglomerate, impure limestone, brown building stone or freestone, that make up the formation, are seen, when exposed, the ripple marks of the waves, the indentations of the rain drops, the mud cracks, and the footprints of birds, insects and reptiles; all made while the mud flats were hardening into dry land. In these rocks in England are found the two great salt beds of Cheshire, that have a thickness of 90 to 100 feet. In the United States are found in these formations beds of bituminous coal (sometimes baked into coke by the trap rocks that came up red hot through cracks that from time to time were made in and near these rocks), copper, barytes, and valuable iron ores. The soil of these rocks is red from the oxidation of the grains of iron ore distributed through the rocks.

These important formations, thus briefly explained, it is hoped, may yet be carefully studied by our people, and reported on, that we may better know their value.

Yours, truly,

(Signed)

JED. HOTCHKISS, *J. E*

We have, in this matter, taken the counsel of Mr. WILLIAM H. WHITE, of Massachusetts, than whom no grower of this character of Tobacco in the United States has been more successful. He has been good enough to furnish us with the two essays following, one by Mr. HULL, of Connecticut, and the other by Mr. LIBHART, of Pennsylvania. Of course, this is not intended to affect at all our arrangements for the coming season; and even next season we beg that those who propose to make the trial on their soils will only operate in a very small way, so as to ascertain as exactly as possible what promise they have of success when pitched on a larger scale. That is, as the "fancy bright" came in by degrees to the place it now holds, we cannot expect this new type to fare better; besides, it requires time to bring a new product into the grooves of regular trade; but the matter is altogether too important to be ignored by us.

The instructions here submitted being for higher latitudes than ours, the judgment of the planter will, of course, be exercised in modifying them to suit his surroundings. Mr. WHITE informs us that the average of frosts,

injurious in his region, is the middle of May and say the 10th of September, which, as compared with ours, indicates, for the intermediate time, quite a short season.

### On the Cultivation and Curing of Seed Leaf (Cigar) Tobacco.

I.—By PERRY N. HULL, *Litchfield county, Connecticut.*

The cultivator of Tobacco needs, 1st. A rich, warm, finely pulverized soil; 2d. Strong early plants. The failure to obtain either of these at the outset, will very seriously endanger the success of the crop. Here in Connecticut, it usually requires the whole season for the crop to arrive at the proper state of maturity, without which its value is greatly diminished. Even though harvested no more than one week before maturity, the danger while curing is greatly increased, and if, through very favorable weather, the Tobacco escapes total ruin by pole-burn, its value will still be diminished one-fourth by bad colors, etc.

SEED-BEDS.—Select a light garden soil, in a location sheltered from north winds, but exposed to the sun from morning until evening, and prepare in October. The best manure for plant-beds is that taken from the hog-pen, kept in a heap through the summer, and occasionally cut over with a shovel, that it may be thoroughly rotted. Such manure contains fewer weed-seeds than almost any other, and its fertilizing qualities cannot be surpassed. This should be generously applied—say scatter the ground over one, or one and one-half inches deep, and thoroughly spade in, in the month indicated. The seed should be selected from an early, strong growing plant, which should, after ripening, be cut up and hung in a dry place, top downwards; the seed, if out of the reach of mice, keeping in this way much better and safer than if picked and shelled.

VARIETIES.—There are almost as many varieties of seed-leaf Tobacco as there are of Indian corn—the difference not always noticed by the inexperienced, but very readily by the experienced cultivator. In my opinion, the variety best adapted to our purpose, is that known in this State as the Bull Tongue. The leaf is neither too long nor too short, the length and width being in such good proportion that manufacturers consider there is less waste than there is to a very narrow leaf, or a very broad, short leaf. It yields well, and ripens at least one week earlier than many of the broader varieties. Almost any of the seed-leaf varieties will do well; but never patronize any of the humbugs sent from the Patent-Office, under the name of Graham Tobacco, Maryland Broad-Leaf, etc. They are a southern Tobacco, and when grown upon that soil, make chewing Tobacco; but here it is good for nothing for that purpose, and is too coarse for cigar-wrappers.

Many are too anxious in the spring to get their seed into the ground, to be successful in getting good plants; as often, after waiting two or three weeks for the plants to come up, they have to make a second sowing, thereby putting them back a week or more. Wait until the ground is dry, and warm enough for the seed to grow, instead of rotting. When this change has taken place in the soil, sprout the seed, instead of sowing dry, thus gaining at least ten days' time, and precluding the possibility of being disappointed in the first sowing. From the first to the middle of April (being governed by the forwardness of warm weather), procure some rotten wood, so rotten that it may be finely pulverized with the hand; mix this with the seed, in about the proportion of ten parts of wood or dirt to one of seed. Mix them thoroughly, and moisten with water slightly warmed, and repeat it as often as it dries up, and keep it in a warm room. The seed will usually get in the proper condition for sowing in from four to six days, depending upon the temperature at which it

is kept. The seed is sprouted sufficiently, whenever, upon disturbing the dirt, it looks silvery inside.\*

The beds should be well worked over with the fork or spade and rake. If the soil is inclined to be moist, raise the beds well; if dry, raise them less. They should be only about three feet wide, to facilitate weeding. After making the top of the beds perfectly smooth and fine, sow the seed, first mixing enough ground plaster to thoroughly dry the seed and prevent them from falling in bunches. The quantity of seed sown should be about one-half a table-spoonful to thirty-six or forty square feet of ground. *Do not rake in the seed*, but procure a smooth board, lay it on the bed, and with the feet stamp the beds quite hard. The ground should never be allowed to freeze after sowing the seed; to prevent this, and also for another purpose, which will soon be apparent, construct a straw mat. They are made by laying a scantling (six feet long, one and a half inches wide, three-fourths of an inch thick) upon the barn floor; place a layer of good straight rye-straw upon it, so that the scantling will come about in the middle of the straw, then another layer with the tips the other way, that it may be of uniform thickness in all its parts (about one and a half inches thick). Place a similar scantling exactly over it, and with sixpenny nails, nail them tight; with an axe trim both edges straight, and to a width of three feet, and the mat is made. With these the beds should be covered *every night*, cold or warm; in the day-time they should be set up at the north side of the bed, at an angle of about sixty-five degrees, by driving crotches just inside of the bed, for the ends of the scantling to rest in, the lower edge of the mat resting on the ground, outside the bed.

The plants, as soon as they are out of the ground, which will be in a few days, require strict attention. The beds should be made high enough, so that in fair weather a little water can be applied every night. After the fourth leaf appears, manure-water should be used. Place an old barrel near the beds, and throw into it one-half bushel of hen-manure, and fill with water; after it is well soaked, use one-half pailful of it, and fill up with clear water with the chill taken off. As the plant gets larger, the strength of the decoction can be increased, being careful that it is not so strong as to turn the plants yellow. As soon as the plants are large enough to be readily taken hold of by the thumb and point of a knife, they should be thinned to about one hundred and forty-four per square foot, and kept free from weeds. This plan is decidedly preferable to raising under glass. It is less expensive, the plants are more hardy to plant out in the field, are got fully as early, and a little carelessness in a hot day will not ruin the whole. It has been my method for the past eight years, and during that time I have never failed to have good, strong plants ready for the field from the fifth to the tenth of June.

PREPARATIONS OF THE SOIL.—Tobacco requires a light, rich soil, in a locality not exposed to early frosts. If the soil is not naturally rich enough, it must be made so by a generous application of manure; and he who is unwilling to "feed his barn-yard," and spend both money and time to increase the manure-heap, had better not attempt the cultivation of Tobacco—at least not largely. It has been, and still is the practice of many farmers in the Connecticut valley, and to some extent here in the Housatonic valley, to plant one and the same piece of land with Tobacco year after year for an indefinite period, because, as they say: "Tobacco impoverishes the soil, and they confine it to a single piece, rather than have its injurious effects upon all parts of the farm." It seems as if almost any practical farmer would discover the fallacy of such reasoning, for these same farmers carry all, or nearly all

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\*NOTE BY THE COMPANY.—With our softer climate, and longer season, sprouting the seed will probably not be necessary. MR. LIBHART (Essay II) is opposed to it, and he is a good deal north of us. The same shortness of season in New England requires a very much heavier application of stimulating manures than would be needed with us.

their manure, upon this one piece, year after year, leaving the remaining part of the farm to take care of itself as best it may, which, in my opinion, is the surest way to impoverish a farm which a farmer could take. Besides, it will take almost as much again manure per acre to raise a crop in this way, as it will where Tobacco is grown as one in a rotation of crops, and a new piece of land taken for it every year. This was the idea that I started with when I commenced growing Tobacco ten years ago. I have cultivated from four to six acres yearly ever since, without ever more than once or twice planting the same piece of land two years in succession. This distributes the manure over a great portion of the farm, thus keeping the whole in a good state of fertility.

The turf should be turned over in September or first of October, only three or four inches deep, plowing the manure in with it, which should be well-rotted by being kept over the summer, under the sheds and barns, or, which is better yet, in a heap in the field, composted with swamp-muck. In the month of May, the field should be worked over with the plow and harrow, until thoroughly pulverized. If there have been from twenty to forty loads of manure applied to the acre, according to the natural condition of the soil, no further manuring will be necessary; the hills can be made with a hoe, and the field be ready to receive the plants. If some special fertilizer is to be used, my method is this: take a horse-plow and mark out the rows, three feet four inches apart, making a shallow furrow, say two inches deep; scatter the manure, if guano, two hundred pounds to the acre—if superphosphate of lime, three hundred and fifty pounds per acre—evenly the whole length of the furrows; then make the hills with a hoe, from two feet to two feet six inches apart, raising them somewhat above the level of the ground, at the same time covering the intervening part of the furrow. The object of thus scattering the fertilizer instead of dropping it all immediately in the hill, is this, that the roots, reaching it gradually, its effects will be felt throughout the whole season; whereas, if it is all dropped in the hill, its power would soon be spent. I am aware that some practice and recommend ridging ground before planting out, but I consider the above practice better for this reason: where the ground is thrown into ridges beforehand, a plow can not be used in the after-cultivation, or it will leave the ridges too high; consequently the cultivation must all be done with the hoe, which, I believe, is the practice of those who ridge. On the other hand, a light plowing at each hoeing greatly reduces the labor, and also raises the ridges to a sufficient height. All this preparation should be accomplished just before the plants attain sufficient size, that there may be no hindrance, and all hands may be engaged in

**PLANTING OUT.**—When wet, lowery weather comes, from the first to the middle of June, take the plants carefully from the beds with a garden trowel, digging deep enough to secure all the roots, and transfer them carefully to the field. In planting them, see that every man puts the roots well into the ground, and leaves a little disk around each plant, to hold a half-pint of water, in case dry, hot weather follows. In many seasons we do not get the wet weather, but it is not best to delay later than the 12th or 15th of June. One wagon or cart-load of burdock leaves, or brakes will nearly cover the plants upon an acre, and I have often thought that plants put out in dry, hot weather, watered and lightly covered from the sun for a few days, started to grow sooner and better than those set out in wet weather, and not covered. When the field is once planted, it needs but little care for a while, unless the black corn-worm attacks it; in that case—and they are too plenty—it is best to catch them off, and often reset, or fill out the field, that the plants may start as near alike, and the field be as even as possible. It should be hoed as often as necessary, until all weeds are thoroughly subdued.

**WORMS.**—The tobacco-worm usually makes its appearance about the first of August. Our Tobacco being raised for wrappers to cigars, the necessity for keeping the leaves as sound as possible, is at once seen; for no matter of how fine a texture a leaf may be, if badly

eaten by the worms, it must go into the lower grades, and sell for a small price. After the worms make their appearance, the Tobacco should be gone through, as often as twice a week, and the worms destroyed, large and small.

**TOPPING.**—The top or seed bud, will generally make its appearance from the first to the tenth of August; as soon as developed enough to get hold of conveniently, it must be pinched off. The exact point for topping, must be determined to a great extent by the cultivator. Some fields of Tobacco will mature a plant of eighteen leaves, while others will not more than twelve; depending upon how forward the crop is, and the strength of the ground. The above numbers are the two extremes, from fourteen to sixteen leaves are usually left to the stalk when topped from first to the fourth of August, from the fifth to the tenth, leave from twelve to fourteen.

**SUCKERS.**—After the top is taken off, the suckers will start, one from the base of each leaf, those at the top making their appearance first, then downwards in succession. These must be taken off as fast as they get large enough to be got hold of, otherwise a great amount of growth is lost, and consequently the maturity of the plant retarded. As the plant approaches maturity, great care should be exercised in going through and handling as the leaves are daily growing brittle, and are liable to be broken off and torn by careless hands. Turn back to their natural position all leaves turned up by the wind, or the sun shining upon the under side of the leaf, will soon burn it, and very seriously injure the color.

**HARVESTING THE CROP.**—This is an important season, and generally commences about the first of September. Before cutting any, see that the drying sheds are fully prepared with poles and scaffolds; the twine examined for rotten places, etc. The best convenience for transporting it from the field to the shed, is the simplest. If a cart is to be used, remove the body, and with two poles construct one without sides, only bottom and ends. If horses are to be used, use trucks, the wheels of which will be entirely out of the way. With either of these, the plants can be loaded crosswise with the butts out, and tips lapping in the middle; being careful in loading to lay a tier across one side, then the other, regularly, that it may be taken off without any pulling or tearing of the leaves. In this way four or five hundred plants may be carried at a load.

A very little experience will teach one to determine the proper time for cutting. When about ripe, the color changes from a dark green to a spotted appearance; the under side of the leaf, when pinched between the thumb and finger, will crack; the suckers commence to put out, below the bottom leaves, and the plant presents an entirely different appearance from what it previously did. There is decidedly less danger of Tobacco getting too ripe than there is of it being cut too soon; many a crop being seriously injured by being harvested before perfectly mature. The plant should never be cut while the dew is on the leaves; but wait until it is off, say ten o'clock, and what Tobacco is cut from that time until two o'clock, if the day is hot, will need close attention. In short, the whole operation, from cutting in the field, to the hanging upon the poles in the barn, needs care, as a little carelessness or inattention will damage many dollars worth. No hand should be allowed to handle it, who is unwilling to use care, and perform every operation just as directed, or else by breaking of leaves, or sticking fingers through them, etc., he may do more damage than his wages amount to. The plant to be cut should be taken by the left hand, not carelessly by the leaves, but carefully by the stalk, and as carefully leaned over to give a chance to use the ax, which should have a handle about one foot long. Cut the plant with one blow, laying it carefully down with the top to the sun; if it is laid otherwise, the leaf will burn before the main stalk of the leaf will wilt sufficiently to admit of handling. Even in that position, it may burn unless attended to, but not as soon. After lying until pretty well wilted, and before burning, turn it over and wilt the other side,—

When so wilted that the main stem has lost most of its brittleness, load as explained above ; taking hold of the butt of the stalk, lay them carefully upon the arm and again as carefully upon the load. If the day be very hot, use expedition in getting to the shed, else if the distance be great, the load may heat, which will spoil the leaves for anything but fillers.

When carried into the shed, if quite warm, they should be left only one plant deep upon the floor and scaffolds. If the day be cool, and they are to be hung up soon, they may lie much thicker. They should never be hung upon a pole less than five inches in width. If sawed pieces are used, saw them just that ; if poles are used, see that they are about that ; for if anything of less width is used, the plants will hang so close, that the chances of *pole-burn* are greatly increased. They are fastened to the pole by a half hitch.

It requires two hands to hang them, one to hand them, another to tie them. The poles should be about eighteen inches apart, and the number hung upon a twelve foot pole will depend upon the size, from twenty-four to thirty, so regulating them, that when thoroughly wilted, they will scarcely touch each other. If hung thicker than this, a little unfavorable weather will cause more or less pole-burn, sweat and mould. After the tobacco is hung, the building should be so thoroughly ventilated that there will be a circulation of air through every part. The ventilators should be kept open during all fair weather, until well cured down. During storms, shut the doors and exclude as much wet as possible ; being cautious to give it a thorough ventilation again, as soon as the rain ceases. When it is cured enough to be husky in dry weather, exclude all hard winds, that will crack and damage the leaves. When the leaves are so much cured, that there is nothing about them green but the stem, a moderate quantity of wet weather will not injure it, but rather improve the color ; as the sap of the stalk works through the stems into the leaves, during moist weather, until the stalk has been well frozen ; after this takes place, the Tobacco should be picked.

PICKING.—Tobacco, as a general thing should not be picked until about December ; at least not until the *fat stems* (main stems of the leaves, which are not thoroughly cured at the butt end) have mostly or all disappeared, which they will have done by that time, if the crop reached maturity before harvesting. The operations of picking and assorting are by many, who make only two classes or qualities of the tobacco, carried on at the same time. By far the preferable way is, especially if there is a very large crop to pick, to take off the leaves during damp or wet weather, tie them into bundles of fifteen or twenty pounds, with twine, and pack it away into cellars, or wherever it can be kept without drying up. It can then be assorted in any kind of weather, thus gaining considerable time, as two will pick and tie up in this way as much during one wet spell as six hands would, assorting and hanking up, at the same time. Another reason why the last practice is preferable, is, that, by the former, the assorting can be but indifferently done ; whereas, by the last, it can be done as carefully as desired. Tobacco should not be allowed to get too wet before picking ; in fact, should not be allowed to get *wet* at all, so as to feel *wet*, only just damp enough to make the leaves pliable, so as to handle and pack without breaking or feeling husky. If allowed to get *wet*, before picking, it is next to impossible to get it dried to the proper state again uniformly, so but that some of the leaves will still be too wet, while others will be dry enough to crack and break. So if the rains are long enough to get it too wet, which they often are, by all means let it remain upon the poles until the next wet spell.

ASSORTING.—Tobacco, to sell well, should be assorted into *three* classes or grades,—Wrappers, Seconds, and Fillers. The wrappers, will include the soundest, best colored leaves, the color (a dark cinnamon) should be as uniform as possible ; this quality should include nothing but what is fit for wrappers. The Seconds, which are used as binders for cigars, etc., will include the small top leaves, of which, if the Tobacco was topped too high, there will be one or two to each plant—the bad colors, and those leaves somewhat

**SOILS AND SITUATION.**—If it is intended to raise a crop of Tobacco, a primary and very important consideration is the situation and quality of the soil. The best situation can not always be chosen with accuracy, as much depends upon the season; if it be dry, a meadow or other low piece of ground is preferable to a more elevated tract; and if, on the contrary, it should prove to be a wet one, then the cultivator runs a great risk of losing his whole crop by mildew, frost, or inundation by heavy rains. The safest and surest is a moderately elevated situation, which may be either level or gently rolling; hill sides or steep declivities being objectionable on account of the liability of the plants being washed out by heavy rains. The soil best suited to growing heavy Tobacco is a deep sandy loam, made as rich as possible with barn yard manure and thoroughly plowed and worked. Any soil that will hold water long about the roots of the plant will not do for Tobacco, as in such situations it becomes attacked with a disease vulgarly called "fox-tail," in which the new leaves, as they appear from the heart of the plant, are of a sickly, transparent, yellow color, spotted with greenish specks, and shrivelled and curled up, not half as long nor wide as they should be, and if the plant is not divested of the diseased portions, finally culminating in a mass of worthless vegetation. A stiff clay soil should be avoided as being too liable to bake and become hard, thereby checking the progress of the minute fibrous roots of the plant. If the land be in sod, it should be plowed in the fall, and even if it be open, it will be benefited thereby, as the frost will destroy a great many of the larvae of the cut worms, which are a great nuisance among the young plants when just set out.

**SEED-BEDS.**—In the preparation of the plant beds and sowing of the seed great care is required, as a good crop of Tobacco depends greatly upon a good and abundant stock of plants. Select a situation free from the blasts of the north winds and which receives as much sunshine during the day as possible. Then manure strongly with well-rotted compost, hen-manure, ashes or other good fertilizer, and spade to the depth of about a foot; then rake or otherwise pulverize the ground to as fine a condition as it is capable of. When the bed has been thus prepared, the seed should be sown in about the quantity of a teaspoonful to every one hundred square feet, and in order to get it distributed more evenly, it may be mixed in dry wood-ashes or sand. Sprouting the seed previously to sowing is not a good practice, as the germ is so delicate that it is apt to be injured by handling or drying up in the sun, besides being entangled in bunches, and thus coming up very irregularly. After the seed has been distributed over the bed, it should be rolled or beaten down pretty firmly with the back of a spade; this presses the earth around and against the seed, which enables it to germinate quickly, as, owing to its minute size, it is not enabled to do when lying loose and exposed to the air. In this latitude, 40° north, the time for sowing the seed varies from the fifteenth to the thirty-first of March, according to the season; this renders the plants fit to set out about the latter end of May or beginning of June. They may be had two or three weeks earlier by forcing under glass; and in high latitudes this will be necessary to insure a ripening of the crop before frost. Whenever the surface of the bed becomes dry, it must be watered with tepid water; this should be done in the morning or evening. It is scarcely necessary to add that the bed must be kept perfectly free from weeds; tobacco differs from most *weeds* when making its first appearance above the surface of the ground, by its bright green color, and by lying very flat upon the soil. After the leaves of the plant have attained the size of a quarter dollar they may be set out in the field, but they will be all the better if double that size, as they are then not so easily destroyed by the cut-worm. The main point, and that upon which success greatly depends in raising a good crop of tobacco, is to

damaged by worms and bad handling, but not so much so as to be ragged. The third class, or *Fillers*, will include the balance of the crop, bottom leaves, ragged leaves, etc. The tobacco should be done up into hanks of about one third of a pound each, or about what can be encompassed by the thumb and fingers, winding at the butt with a pliable leaf, drawing the end through the hank to secure it.

After assorting it should be corded up awhile, in a dry place, that the butts may be thoroughly cured before packing in the cases. The pile is made with the butts out, and tips interlapping in the middle, at every other course, at the ends turning the butts towards the end. Get upon the pile upon the knees, take hold of the butt of a hank with one hand, drawing the leaves at the tip together with the other, and placing it upon the pile in that position, immediately putting the knee upon it. After the pile is finished, it should be covered over with boards, to keep it from drying up, and a few days before packing into the cases, should be well weighted down, which will save a great deal of pressing at that time. Such a pile should be made only about two and a half or three feet high, and then closely watched to prevent a premature sweat, which often, if the weather be mild, will take place in such a pile, which will not be sufficient to render the tobacco fit for working but which, if not intercepted at the commencement, will be sufficient to prevent a proper sweat afterwards. Check, therefore, the first symptoms of heat in such a pile, by opening the pile, and repacking it, shaking out the hanks and giving them time to cool off.

**PACKING.**—The cases are made of cheap pine lumber, three feet eight inches long by two feet six inches wide and high, outside measurement; they should be made tight and strong; there should be corner pieces nailed in one and a half inch square, nailing to them well from both ways. The tobacco is packed in, with the butts towards each end; taking hold of the butt with one hand, the tip with the other, and giving the hank a slight twist, lay it in the case in that position. A lever or screw can be used to do the pressing, which ever is the most convenient. From 360 pounds, to 380, is the proper weight for packing; though if the tobacco is very dry, 400 pounds will probably not sweat too hard; and if quite wet (which it never should be), 350 may.

After being packed the tobacco should never be kept in a damp cellar; a good tight barn or other outbuilding, where the cases can stand on the floor, is the best place. The crop usually passes from the hands of growers, into those of speculators and dealers, before the sweating season. The first symptoms of sweating appear about as soon as settled warm weather comes, usually the fore part of May; it then commences to grow warm, and *wet* to appearance, which increases for about three weeks, when it reaches its culminating point and commences to cool off. One unaccustomed to the crop, upon examining it at this period, would be sure to think it was rotting, but if not too damp when packed, there is no danger. Sometimes, if a case is known to be too wet, the lids can be started, to give a little for it; and it is far safer to see that the proper condition is secured before packing, than to do even this. The weight will commence to decrease about as soon as the heat commences, and it has been ascertained by weighing at the various stages, that more than half of the shrinkage is accomplished by the time the sweat has reached its culminating point. About ten per cent. is allowed for the shrinkage of a crop, in just the right state when packed; if wetter, it will shrink as high as twelve or thirteen per cent., and if very dry, it may shrink less than ten per cent.

The different grades usually bring about the following prices: *Wrappers*, fourteen cents per pound; *seconds*, seven or eight cents; *fillers*, three to four cents. The proportion of the different grades in a good crop should be: *wrappers*, three-fifths, and *seconds* and *fillers*, each one-fifth.



have good plants enough to fill the patch at one planting, so that the tobacco may be of a uniform size and ripeness when cut off.

**VARIETIES.**—The best variety for cultivation in a high northern latitude is the Connecticut seed-leaf, as it ripens two weeks earlier than most any other variety, cures and colors better, and commands the highest price in the market. The Pennsylvania seed-leaf outstrips the Connecticut in size and weight, but owing to its requiring a longer time to mature in, is not so well adapted to climates north of  $41^{\circ}$  or  $42^{\circ}$ .

**PREPARATION OF THE SOIL.**—The manure should be spread and plowed down several weeks before it is intended to plant. There is scarcely any limit as to the quantity of manure that may be put to the acre, it seeming that the richer the ground is, the larger will be the tobacco. As an instance verifying this fact, a gentleman in this place raised the past season on a half-acre of land fourteen hundred lbs. of tobacco, of the aggregate value of \$230. There was \$25 worth of barn-yard manure put upon it at about the rate of fifty cents per one horse load; the average crop in the vicinity was only about twelve hundred lbs. to the acre. After the land is plowed, and a few days before it is intended to plant, the soil should be well worked with a harrow or large cultivator until it is free from lumps or clods, when it is ready for ridging; this is performed with a common plow. Beginning on one side of the field, take a light furrow, so as to throw up a ridge about five or six inches higher than the surrounding surface of the field. When arrived at the end, return another furrow alongside, so that the earth thrown up by the plow unites with that of the former furrow, leaving a ridge apparently about ten inches in height, but really only five or six above the general level. So proceed, making the apex of the ridges three-and-a-half feet apart, until the whole is finished. Measure off the distance of thirty-six inches for the plant on the top of the ridge, with an instrument constructed as follows: Take two strips of board, two-and-a-half feet long and an inch square, make one end of each pointed, then spread them in the form of a pair of compasses, until the points are the desired distance apart, making the other ends lap each other, fasten them, and put a brace across about the middle to keep them stiff; with this instrument one person can go before, and planting one point at a time on the apex of the ridge, measure off rapidly and correctly the place for each plant. Now take a hoe, and at each indentation made by the compasses, cut off about two or three inches in depth of the top of the ridge, and tap it lightly with the back of the hoe; this forms a platform or "bench" for the reception of the plant.

**TRANSPLANTING.**—When the ridge has been thus prepared, one person goes ahead with a basket of plants and drops one on each "bench," another person following and planting as rapidly as possible, as it is injurious to the plant to leave its roots long exposed to the air. In inserting the plant, a hole may be made with a pointed stick, but the most expeditious, as well as the best way, is with the hands. The roots of the plant are carefully inserted, and the earth pressed moderately tight upon them; care must be taken not to press the delicate heart leaves, for upon their preservation depends the future vigor of the plant. The best time for planting is during a warm, drizzling rain; but if no such occasion presents itself, when everything is ready, then immediately before or after a shower will do nearly as well. If it is necessary to plant without any rain, it should be done in the evening, and each plant watered slightly. Unless absolutely necessary, never plant when the ground is in the consistence of mud, as the roots are doubled up and stuck together, and there is considerable time lost in starting the plant, if, indeed, it ever becomes vigorous. In taking the plants from the bed, if the earth is not previously well moistened by rain, water the ground sufficiently, so that the plants will come up with some earth attached to the roots; they may be pulled by taking hold and gently doubling up the several large leaves of the plant at once; they are very nicely raised with a common table fork. After

the whole area has been planted, it should be gone over every few days, and such plants as have been destroyed by the cut-worms, or otherwise, replaced by new ones; if, however, a plant shows signs of remaining vitality, it should not be destroyed, but a new one placed alongside, as it often happens that a plant of the first setting, even though it be injured, will eventually outstrip in growth one of a subsequent planting; either can be used to advantage in replacing any missing plants at the first hoeing, transplanting them with a large ball of earth to the roots.

**CULTIVATION.**—When the weeds begin to appear pretty abundantly, and after the plants have made visible growth, a cultivator must be run between the rows, taking care that it does not throw up the earth on the ridges and cover the plants; a cultivator that can be regulated in width is the best. Hoe down the prominences of the ridges to a level with the plants, and eradicate all weeds that have come up between the leaves of the plants; also transplant from any double plants to such hills as have become vacant. The plants will now begin to grow vigorously, and require no attention beyond transplanting, to fill vacancies until a new crop of weeds appear, when the cultivator must be again run through, and the plants carefully hoed, fresh earth being drawn up after the weeds have been scraped away. Care must be taken not to hoe too deep close to the plant, as it destroys too many of the fibrous roots which have begun by this time to permeate the soil in every direction. When the weeds and grass have been thoroughly killed by the sun, the shovel plow or hook may be run between the rows, and following after, uncover such leaves as may have been buried by the earth thrown up by the implement, and hoeing the ridges into an even shape, rather flat upon the top, and rounding off gradually till they meet in the centre between the rows of tobacco, forming a ditch or furrow not too deep, but answering the purpose of a drain. This is all the cultivation it will require, but if the weeds come up between the rows thereafter, it will benefit the tobacco as well as the ground if they are scraped off with a hoe.

**WORMS.**—Now no attention is required until the tobacco-worms appear, which, in this latitude, 40° north is about the latter end of July, when it must be gone over every few days, and the worms picked off and destroyed. The moth that produces these worms is nocturnal in its habits, and in the twilight may be seen hovering over the plants and depositing its eggs on the under side of the leaves; these are of a transparent green color, and very hard to detect on account of their similarity in color to the leaf. The worm begins to feed as soon as it emerges from the shell, and grows and increases in size so rapidly, that it soon becomes a formidable enemy to the farmer, and if not captured, will soon cut the plant to shreds; and not content with spoiling one plant alone, will visit and demolish several more before entering the earth and becoming a chrysalis. Continue to visit the field regularly every three or four days until the time for topping arrives.

**TOPPING.**—There can be no stated time for this, as it depends upon the stage of growth in which the plant may be, and the latitude or climate. As a general thing, it should be topped before the seed buds are visible, for when these appear, the plant has expended most of its vigor, and is no longer able to mature the upper leaves; and it must be done at least four weeks before the period of heavy frosts. The number of leaves that may be left to a stalk depends upon the quality of the soil; if it be very strong, it will mature twenty or twenty-four leaves, but in general from sixteen to twenty is amply sufficient to leave on a stalk in any situation. In topping, it is better to pinch out enough of the crown of the plant to leave the first two leaves not less than three or four inches long, as they grow more vigorously and mature more rapidly than the small and tender leaves found about the blossom buds. In pinching out the heart of the plant, care must be taken not to break or injure the upper leaves that are left. When topping, the plants intended to produce seed for the following year's crop must be spared; they should always be chosen with regard to the

heaviest, as well as the longest and broadest leafed plants, as weight and size of leaf is the chief consideration of tobacco-growers. The seed-stalks should be left standing until the pods are fully formed and begin to turn brown, when the leaves may be stripped off and saved, and the stalk be spaded up and placed beyond the reach of frost until the seed is fully ripe.

**SUCKERING.**—Soon after the tobacco has been topped, the “suckers” begin to appear from the junction of every leaf with the stalk; they must be pinched off as soon as they are large enough to be caught by the thumb and finger, and every new one that appears must be served likewise, for if left they consume much of the nourishment that would otherwise go to the leaves, besides much impairing the process of curing when the stalk is hung up.

**CUTTING AND HOUSING.**—When the top leaves have attained the size of the lower ones, and begin to be dotted with reddish spots, the tobacco is ripe, and ready to be cut off and hung up to cure. There are several methods of hanging up tobacco, but the following two are the best and shortest: first, splitting and hanging it upon lath or poles, and leaving it to partially cure in the field; secondly, nailing it to rails with lathing-nails, at once in the shed. The former method, for high northern latitudes, is by far the best, as it will cure in a much shorter time (and thus prevent the destruction of the crop by freezing in the shed) by the drying of the pith of the stalk, which is the main reservoir of moisture. It is performed as follows: have a chisel about a foot long and three inches broad, the sharp end not beveled on one side, but coming to an edge by a gradual taper on both sides (a common tenon saw will do pretty well); place the edge of the chisel in the centre of the stalk upon the end where it has been topped, and push it down, guiding it in its course so as not to break or cut off any leaves, to within three or four inches of the ground; the stalk may then be cut off with a hatchet, or with the chisel, if it be made pretty strong. The splitting may be done in the morning when the leaves are too brittle to admit of the stalk being cut down, and then, when the sun has sufficiently wilted the leaves, the stalk may be cut and left to lie until it will bear handling without breaking the leaves. The lath being previously prepared, four feet in length, and about an inch in thickness on one edge, and one-half inch on the other, and two inches broad (or poles cut in the forest will answer pretty well); then have trestles prepared high enough to allow the stalks to hang suspended without touching the ground, and set far enough apart in the field to admit of the lath reaching from one to another; now place the stalks of tobacco upon the lath (previously laid across the trestles) by slipping them over and down until they will hang perpendicular, and six or eight inches apart, so they will merely touch, without crowding too much. It may be left hanging thus exposed to the weather until the leaves are so wilted that the stalks hang apart without touching, and the lower leaves begin to dry, when it is taken off the trestles, each lath entire, and laid upon a wagon and hauled to the

**SHED OR DRYING-HOUSE.**—The shed must be constructed of timbers strong enough to resist storms, and should be boarded “up and down.” About every three feet one board should be hinged, to readily open and shut. If it is intended to split and lath the tobacco, the inside of the shed must be divided by rails into widths to accommodate the lath, and likewise into tiers, one above the other, far enough apart to allow the stalks to hang from, well separate. The frame of rails and timbers inside the shed, destined to sustain the weight of the tiers of tobacco (which when green is exceedingly heavy), should be strongly constructed, so as to preclude the possibility of breaking down, for if this should happen to the upper tier, in all probability the whole would be tumbled to the ground. When ready to hang up, beginning at the top tier of the shed, slip on one lath after the other, until the whole is filled. The process of nailing it up to rails or strips of board, in some respects may be superior to the former method, as the tobacco is more expeditiously secured in the shed,

and does not require so much handling, but in general there is more tobacco lost by being frozen in the shed than will pay for the difference in time and labor. The stalk should be cut down after the dew is off in the morning and left to wilt. If the sun be very hot, the tobacco must be watched that it does not scorch, and if this be found to be the case, it should be thrown in heaps about a foot high, and three feet or less in width, and then hauled into the shed; here it must not be piled more than a foot high, or it will soon heat and spoil. It should be nailed up as rapidly as possible; one person sticking the nail in the pith of the stalk exposed by cutting it off from the ground, and shaking it to loosen the leaves, hands it to a second person, who nails it to the rail, far enough apart to allow of the circulation of the air throughout. After the crop is in, the doors and shutters should be opened all round, so as to allow a strong draught of air to pass through the tobacco and prevent what is technically called "burning." This is literally nothing more than a partial decomposition of the leaf, consequent upon the exclusion of air from passing through it while in the green state, which destroys its quality and texture. When dried it has a blackish brown color, and crumbles beneath the touch. When the tobacco is pretty thoroughly cured, and during dry weather, when it is very brittle, the high winds that prevail about that season will damage it very much if allowed to blow through the shed, hence at such times the shed should be closed on the sides whence the wind comes, and opened again when it has ceased to blow. When the leaves are all dry, or after the weather has been severe enough to freeze the remaining green ones, the tobacco is ready to be stripped.

**STRIPPING.**—At the setting in of a warm, drizzling, wet, foggy spell of weather, the shed must be opened on all sides to allow the damp atmosphere to pervade the whole interior; after the dry leaves have become damp enough to allow handling in any degree without breaking, the stalks must be taken off the lath, or pulled down and laid in heaps about eighteen inches or two feet high, and any desired length; if it is not intended to strip it immediately, it should be conveyed to a cellar or other apartment, where it will remain damp; it should not, however, be suffered to remain longer than two or three days in heaps without examination, as there is sometimes sufficient moisture remaining in the stalks or frozen leaves to create heat and rot the good tobacco. If found to be heating, it should be changed about and aired, and be stripped immediately. If found to be drying out, further evaporation may be checked by covering the heaps with damp straw or corn-fodder. Tobacco is usually stripped into two qualities, "ground-leaf" or "fillers" and "wrappers;" the leaves that lie next the ground, generally from two to four, are always more or less damaged by sand beating on by the rain and other causes, hence they only command about half the price of the good tobacco or "wrappers." The ground-leaves are taken off first, and tied up separately in bunches or "hands;" this is performed in the following manner: take off one leaf after another, until there is contained in the hand a sufficient number to make a bunch about an inch in diameter at the foot-stalks, which must be kept even at the ends, and holding the bunch clasped in one hand, take a leaf and wrap it around (beginning at the end of the bunch), confining the end under the first turn, continue to wrap smoothly and neatly until about three inches of the leaf remains, then open the bunch in the middle, and draw the remaining part of the leaf through. This forms a neat and compact "hand," that will bear a great deal of handling without coming open. After the ground-leaves have been removed, the good leaves are stripped off and tied up the same as the ground-leaves, with this exception: the leaves of each stalk should be tied in a bunch by themselves, to preserve a uniformity in color and size, as tobacco is sold in the market according to color and size, therefore if the leaves of a large and a small plant, or of a dark colored and a light one, be tied up together, it at once diminishes the appearance and value of the crop.

**BULKING.**—As soon as a quantity of tobacco is stripped it should be “bulked down,” or if intended to be immediately delivered at the packing-house, put up in bales. A place to bulk it in should be damp enough to prevent the tobacco from becoming dry, and not damp enough to cause it to mold. A platform raised a few inches from the ground, and open to let the air circulate under, must first be laid down, and then the “hands” of tobacco piled upon it crosswise in successive layers, and lapping each other about three or four inches at the points of the leaves. If “bulked” beside a wall, a space must be left behind for air to pass through to prevent moulding. It may be thus “bulked” four or five feet in height without danger of spoiling. In most sections the crop is sold to merchants who have packing houses, and who pack it in cases of about three hundred pounds each, and store it until it has gone through the “sweating” process, by which it becomes fit for manufacturing purposes, and then dispose of it to manufacturers and speculators in the city markets.

**PACKING.**—In order to transport it more readily, it is put up in bales of about one hundred pounds each. The process of baling is performed thus: make a bottomless box about thirty-four inches long (inside) by sixteen high and wide. On each side nail two upright cleats, one-and-a-half inches thick, each ten inches from the end. Across these cleats, parallel and even with the top of the box, nail a narrow strip of board. These strips or rails are to confine and keep the ends of the straw-bands out of the way while packing. Now have a duplicate box the same size in length and breadth, but about six inches deep, to fit down on the top of the first box; there must be three notches cut in the bottom of each side of this box for the bands to pass through. It should fit down close on the top of the true box. There must also be a lid made to slip up and down easily in the box, with three notches in each side to allow it to slip past the bands. When ready to pack, have good bands made of rye-straw, and wet, to render them more pliable. Twist them, and getting inside the box, lay one band down on the ground, with the knot in the middle, and within three inches of the end of the box, and place one foot in each corner of the box upon the band, then push the ends of the band down between the outside of the box and the rail. There must be three bands in all, one at each end and one in the middle. When the bands are in the box, the “hands” of tobacco are laid in the same as in the “bulk,” keeping the ends of the bunches well against the end of the box, until it is filled, then put on the lid and press it down with lever or screw, whichever may be most convenient; after it is pressed sufficiently solid, remove the lid, and place the upper box in its proper position, fill up to the top with tobacco, and press it down again, and so until the box is sufficiently full to come within the limits of the bands to confine. Now remove the upper box and tie the middle band first (this prevents the mass from expanding further), and lastly, the end ones, and give it another pressure to set the bands and restore the shape of the bale; now pull off the box, and there remains a neat, square bale of tobacco, of about one hundred pounds’ weight, that will bear handling and transportation almost anywhere without injury or coming open. If the tobacco should become too dry in the “bulk” to pack, it may be restored by sprinkling it lightly with hot water, using a small corn-broom, and “rebulking” it, taking down and sprinkling one layer at a time, and allowing it to remain about two days, when the water will have become diffused throughout the whole, and it again be fit to pack.

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THE true test of the value of a manure is its behavior IN THE FIELD, year after year. No shorter road to this end has yet been found; and it is not probable that any will.

We beg our Friends to read carefully what follows.



## TOBACCO FERTILIZER.

We deemed the information presented in the preceding pages of such importance as to insert it without abridgement. The space it consumed has accordingly limited the number of reports we would like to have submitted, showing the action of our Tobacco Fertilizer last year. We have received enough to fill the book, but must content ourselves with those following. It is with great gratification that we are able to point, from year to year, to such universal success in the use of this article. This is the eleventh year it has been before the public, and if time is necessary to demonstrate the value of such an article, the Anchor Brand Tobacco Fertilizer has certainly had this test, *and it does not fail.*

Mr. W. E. ROYAL, of Powhatan county, Va., writes:

You wish to know how the Anchor Brand Tobacco Fertilizer acted on my Tobacco crop last year. I am perfectly satisfied with the result, both on the crop after it was planted and also on the plant beds, not making a single failure out of six beds prepared. Give me plenty of your Fertilizer for my beds, and anybody who prefers ducks may have them. I think my crop the best since the war, with the exception it is somewhat worm-eaten.

I am glad your company can afford to reduce the price of the Fertilizer.

Capt. B. F. WHITE, of Alamance county, N. C., writes:

I used in 1876 some of your Tobacco Fertilizer on old sandy ground, at the rate of 150 pounds to 4,000 hills. The Tobacco grew well and yellowed well on the hill—cured yellow and holds its color. It has always done better for me than any other brand.

Mr. SAMUEL FOSTER, of Davie county, N. C., writes:

I used on my Tobacco last year three kinds of fertilizers, side by side, in hill and drill, as an experiment, viz.: the Anchor Brand, ——— and ———. I noticed no perceptible difference as to the growth where the Anchor and ——— were used, until the Tobacco commenced ripening, after which there was a marked difference in the yellowing of the Tobacco, the Anchor being far superior in yellowing and curing.

Mr. S. V. ARCHER, of Dinwiddie county, Va., writes:

I am glad to inform you that your Tobacco Fertilizer came up to my expectations this year, as *it has always done heretofore*, and though we had a severe drought on our crops through this section, and the worst drought I have ever seen since the war, yet with your Fertilizer my crop of Tobacco stood it, and has made an average crop. I am truly glad to hear that you have reduced the price per ton of the Fertilizer; I intend

using it *every* year as long as it acts as it has done.

Mr. W. W. CATTERTON, of Albemarle county, writes :

• I used one ton and a half of your Tobacco Fertilizer, on eight acres, in the drill, on my Tobacco, this year, and am perfectly satisfied that the investment was profitable. My crop was remarkably fine in size and quality, up to the time of cutting, when it was seriously injured by the storm. I am well convinced that it is equal to any other commercial fertilizer I have ever used at any time, either before or since the war; therefore, being favorably impressed with its action, I cheerfully recommend it to my friends, and Tobacco growers generally.

Dr. J. A. FLIPPO, of Caroline county, Va., writes :

In reply to your enquiry as to the action of your Tobacco Fertilizer on my crop the past season, I have to state, that it made a good crop, and seemed fully up to its usual standard of excellence. I have heard similar expressions of satisfaction by my neighbors who used it last year.

Mr. WM. KIES, of Nottoway county, Va., writes :

I used three tons of your Anchor Brand Tobacco Fertilizer this year, with great satisfaction, on very thin land. With a moderate application I made Tobacco that will compare very favorably with the best lot land; made an application on turnips also, which surpassed my expectation. I am of the opinion that I can raise anything with your "Anchor Brand." Will use it extensively this year.

Mr. J. RAVENSCROFT JONES, of Brunswick county, Va., writes :

I used your Tobacco Fertilizer the past season, with the same satisfactory results, which have uniformly followed its application in combination with the home-made manures. You are already aware that I consider all commercial fertilizers only valuable to the planter as an adjunct to, not a substitute for his own domestic supplies of manure. The reduction in price is gratifying, and will further commend your Fertilizer to the planting community.

[NOTE.—Mr. JONES, raising heavy shipping Tobacco, his views are in strict accord with what we have so continually urged upon the producers of this type of Tobacco. The growers of such Tobacco need all they can command, in the way of manures, both domestic and chemical.]

Mr. J. Q. BASS, of Halifax county, Va., writes :

Your Tobacco Fertilizer acted first rate for me last season. I have used it for several years, and it has always done well for me. I used it two years side by side with ——— and I did not find any difference in the growing of the Tobacco, but believe it yellows the best from the Anchor Brand; besides, I found one bag of yours will go over five or six hundred more hills than one bag of ———, and make just as good Tobacco, therefore I think yours is the cheapest. I expect to get what I need this year of the Anchor Brand.

Mr. R. M. HALL, of Albemarle county, Va., writes :

I used one ton of your Anchor Brand Tobacco Fertilizer on my Tobacco crop last year. I am more than pleased with it, the result being so far beyond my expectations. I think I have made between four and five thousand pounds of Tobacco. I am satisfied I would not have made one thousand pounds without it; and if I could have planted my crop in good time, I believe I would have gotten six thousand pounds. I put four hundred pounds of the Fertilizer to the acre, on a piece of piney old field,—all of it that was planted forward was very large and ripened beautifully. My wheat crop on the land is looking very well. I wish to use two tons of your Fertilizer this year, and heartily recommend it to all who wish to secure a fine Tobacco crop.

Mr. JAMES BRYANT, of Buckingham county, Va., writes :

I only used last year 1000 pounds of the Anchor Brand Tobacco Fertilizer on five acres of branch land, white clay soil; I planted about the last of June; it made a fine start and did as well as I could expect, and indeed better, for the wet season put in after I had worked over the crop. I left out one row, and it made a mere nothing compared with the other Tobacco. If the season had been a fair one my crop would have been entirely satisfactory. I used no guano on the other side of the branch (the land equal), and I got little or no Tobacco; I planted other lands without the Fertilizer, and the turnout was almost nothing. I expect to buy largely the coming season of yours.

Mr. E. P. ZENTMYER, of Patrick county, Va., writes :

All of my friends express themselves entirely satisfied with the action of the Anchor Brand Tobacco Fertilizer, in their efforts to secure by its use an active growth and uniform ripening of Tobacco.

Mess. HALL BROTHERS, warehousemen at Hickory, Catawba county, N. C., have favored us with the following letter written them:

DANVILLE, VA., Feb. 9th, 1877.

*Messrs. Hall Brothers, Hickory, N. C.:*

GENTLEMEN:—We do not hesitate to pronounce the "Anchor Brand" Tobacco Fertilizer, the most reliable article that is used in this fine Tobacco section, and produces a finer and better Tobacco than any other Fertilizer.

These are the facts told us by our most successful planters. From our knowledge of your section, we are satisfied that your lands are well adapted to the cultivation of Tobacco, and we wish you much success. Our house handles nearly all the Tobacco that comes to this market down the W. N. C. Railroad, and whilst they generally have colory stock it is very thin and slazy. On inquiry we find that they do not use fertilizers, which would no doubt make it thicker, and hence more valuable in every way. We invariably recommend the "Anchor Brand" to these planters.

Yours truly,  
PACE BROTHERS & CO.

Mr. J. J. BROOKS, of Person county, N. C., writes:

I have used your Anchor Brand Fertilizer (commonly known as Gilham's Tobacco Fertilizer) for Tobacco and plant beds, for the last eight or nine years, and am well pleased with its results; indeed, think it the best Fertilizer for producing fine Tobacco now in use.

I have never missed raising Tobacco plants in abundance since I have been using it; even last Spring, and in the Spring of 1874, when there was such a failure in plants, I had enough plants to set out my usual crop in good time and to spare.

I think every person who wishes to raise bright Tobacco ought to use this Fertilizer. It grows the Tobacco of good size, matures well, and ripens yellow on the hill, thereby making it a fine Tobacco for bright coal or flue curing. I have also used it for the last two years on my corn crop, and find it acts admirably well, putting about 100 pounds to the acre, in the hill, and think it increased my crop from 50 to 100 per cent.

I use your Fertilizer in the following proportions: On fresh or new ground about 200 pounds per acre, and on old field land 300 pounds per acre, sowing 100 pounds broadcast and 200 pounds in the drill. Sometimes I use farm-pen manure and rich dung-hill earth dug and scraped from corners and

around the yard of old houses, with your Fertilizer, drilling the manure or earth lightly, and then following with Fertilizer about half the above quantities per acre; this process is the best on thin poor land.

I have had good success raising and curing bright Tobacco with the above process. My crop, consisting from six to eight thousand pounds Tobacco, has averaged me, for the last five years, from thirty to forty dollars per thousand pounds.

Mr. W. J. JONES, of Orange county, Va., writes:

The Anchor Brand Tobacco Fertilizer, used by me last year, gave entire satisfaction; but this has been my experience with it for several years past. I expect to continue its use.

Mr. H. FULLER HALL, of Louisa county, Va., writes:

Your Anchor Brand Tobacco Fertilizer gave me perfect satisfaction on my last crop, as it has done heretofore, therefore I shall continue to use it, in preference to any other fertilizer or guano that can be bought, believing it is better for Tobacco than any now offered, Peruvian not excepted.

Mr. WM. F. JONES, of Brunswick county, Va., writes:

I used the Anchor Brand Tobacco Fertilizer last year. I applied 350 pounds to the acre, on piney old field. The Tobacco is a great deal better than I expected it to be, and what has been sold, weighed well. I am highly pleased with the Anchor Brand.

Mr. R. A. RASH, of Dinwiddie county, Va., writes:

I used your Tobacco Fertilizer, and I have heretofore used nearly all the fertilizers now on the market, and must say, with truth, that your brand is superior to any I ever used for Tobacco. It produces a rich heavy shipping Tobacco, and is superior to stable manure for the first year, and it is all that you recommend it to be. Tobacco made from your Fertilizer will astonish any practical farmer, in weight and quality, that has never used it for Tobacco.

Mr. B. TRUEHEART, of Amelia county, Va., writes:

I used your Tobacco Fertilizer at the rate of 300 pounds to the acre upon my Tobacco, and never made better in my life, considering the dry season. The crop was planted upon ordinary land, without the use of any other fertilizer. Your Fertilizer is specially adapted to raising Tobacco plants. I shall use it as long as it is kept up to its present standard and price.



Mr. S. B. GOODMAN, of Powhatan county, Va., writes:

You wish to know how your Tobacco Fertilizer acted the last season—well I find no fault of the Fertilizer; it acted very well. As I have always said, it is the best fertilizer I have ever used for Tobacco. My crop is a small one, but what I did make was large and fine.

Mr. ROBT. J. BARKSDALE, of Amelia county, Va., writes:

I am now stripping a fine quality of Tobacco made from the application of 400 pounds of your Tobacco Fertilizer, *drilled* to the acre. I used a moderate application of it on a piece of new ground with decided effect.

Mr. GEORGE J. FLOYD, of Lunenburg county, Va., writes:

The Anchor Brand Fertilizer which I purchased last Spring acted finely, considering the droughts which we had. Owing to the scarcity of plants and bad seasons I did not have more than half a stand; consequently I could not give it a fair trial, but regard it a first-class Fertilizer for Tobacco, and undoubtedly the best for turnips I ever saw. I raised in my missing Tobacco hills some of the finest I ever had, some weighing as high as nine and a half pounds.

Mr. C. W. INGE, of Lunenburg county, Va., writes:

Your Tobacco Fertilizer has met my highest expectations. In my opinion it is the best in the market.

Mr. RICHARD T. HALLETT, of Nottoway county, Va., writes:

The half a ton of your Tobacco Fertilizer I purchased last Spring proved satisfactory, and made a fine crop of Tobacco on two acres of land, by using nearly 800 pounds on the same. One bag was used for my turnip land, about half an acre, and made a remarkably fine crop.

Mr. O. J. HAYES, of Mecklenburg county, Va., writes:

I have no fault to find with your Tobacco Fertilizer at all. It did well for me, considering the seasons. I can't say that I ever used any that I liked better, if as well; I think it is a No. 1 Fertilizer.

Mr. S. S. BROADDUS, of Caroline county, Va., writes:

I used the Anchor Brand Tobacco Fertilizer the past season on my crop of Tobacco; was well pleased with the result, and take much pleasure in recommending it to *all tobacco growers*.

Mr. JOHN P. PERKINS, of Hanover county, Va., writes:

I send you my report on your Tobacco Fertilizer. I used about 200 pounds to the acre, on a gray soil, and it acted like a charm. I prefer it to any other for Tobacco. It gave it a fine silky texture, which is always so desirable in Tobacco.

Mr. A. A. LOVING, of Nelson county, Va., writes:

I failed almost entirely in plants, and consequently did not have an opportunity of a fair test as to the merits of your Tobacco Fertilizer, but the small quantity of plants I did get planted in time, on which I used it, grew off finely and ripened well. I am well pleased with the Fertilizer, and shall want to use it again this year.

Mr. J. F. WOOD, of Powhatan county, Va., writes:

I was much pleased with the action of your Tobacco Fertilizer on my Tobacco. I only succeeded in planting half of my crop in time to ripen, on which I applied about 500 pounds of the Fertilizer to the acre, making two applications, and I think the Tobacco was as large and heavy as any I ever saw made from stable manure.

Mr. P. A. BEAZELEY, of Caroline county, Va., reports:

I have been using the Tobacco Fertilizer for the past seven years, and it has done very well for me,—indeed I have never had anything but satisfactory returns from this Fertilizer. My crop was planted late in July; and it turned out of good quality and did not fire, while some of my neighbors who used other fertilizers had theirs to fire. I expect to use it continuously.

Mr. S. H. HALL, of Amelia county, Va., writes:

Your Tobacco Fertilizer is by far the best on the market, according to my opinion. I have tried it side by side with No. 1 Peruvian, and much preferred it. If it keeps on as good as it has been, I think every farmer will use it in preference to the (so-called) Peruvian. I have used all kinds of fertilizers, and it is the best that I ever tried. I am glad you have reduced the price. It beats all other fertilizers for Tobacco and potatoes I have ever seen about here.

Mr. R. G. DICKINSON, of Spotsylvania county, Va., writes:

Your Tobacco Fertilizer acted well on my crop. I sowed between four and five hundred pounds to the acre, on poor land, and the yield was very satisfactory. I expect to try it again this year.

Mr. B. H. PERKINS, of Goochland county, Va., writes:

I used last year nearly a ton of your Tobacco Fertilizer on my Tobacco crop. Owing to the unusual dry weather which prevailed in this section last summer I failed to get a good stand. Where I did get a stand I was pleased with the result. I like it so well that I expect to try it again this year. It acted splendidly on my plant beds.

Mr. ABRAM FARIS, of Cumberland county, Va., writes:

You wish to know how your Anchor Brand Tobacco Fertilizer acted for me the last season. I applied 400 pounds to the acre, and made a very good crop of Tobacco. Have used several kinds of Fertilizers, and consider this the best in use; expect to buy it again next Spring.

Mr. D. M. WHARTON, of Westmoreland county, Va., writes:

I used your Tobacco Fertilizer the past season on Tobacco, and its action on the crop was satisfactory. The application was large—from 400 to 500 pounds—on land that had grown Tobacco the two preceding years, and the Tobacco was large. But an unusually wet season, a heavy storm in September and the depredation of worms' damaged it seriously, both in quality and quantity.

I have used the Fertilizer before, and I shall wish to continue to use it so long as my convictions of its value are sustained by future results.

Mr. C. H. CHISHOLM, of King William county, Va., writes:

I used eight bags of your Tobacco Fertilizer last year, on poor land, and made as good a crop as on regularly manured land; and so will buy more the coming season.

Mr. H. T. RHYNE, of Mecklenburg county, Va., writes:

I tried last season some of your Anchor Brand Tobacco Fertilizer,—and it doubled the yield on some old sandy bottom land. I have not yet tried it on red land. I have a high opinion of the fertilizer.

Mr. R. S. OSBORNE, of Nottoway county, Va., writes:

I have always thought well of the Anchor Brand Fertilizer, and used it in preference to any other. In compliance with your request to state how it acted this year, I would say that that part of my crop on which it was applied and planted early was very fine Tobacco. The other planted late was small and late, but has good body. I

think that your Fertilizer, applied properly on well prepared lands, will make a better sample of Tobacco than any I have ever used.

Experience teaches me that no fertilizer will pay on lands that have not a sufficiency of vegetable matter in them. I have made fine Tobacco with 150 pounds of your Fertilizer to the acre; but it was well-prepared new land, rather than old field pine land.

Mr. JAMES E. WILLIAMS, of Prince Edward county, Va., writes:

I have used your Anchor Brand Tobacco Fertilizer side by side with two other standard fertilizers, and the result was decidedly in favor of the Anchor.

Mr. M. B. HURT, of the same county, writes:

I used one and a half tons of your Anchor Brand Tobacco Fertilizer, on ten acres land, 40,000 hills, and made the best crop I have made in twenty years. The plants were set out the first week in June, and the crop housed the first week in October. I think the crop will weigh 10,000 pounds. I also used one ton of your Old Dominion Fertilizer on corn, and was well pleased with it.

Dr. GEORGE B. STEPHENS, of Albemarle county, Va., writes:

I am glad to see the reduction made in the price of your Anchor Brand Tobacco Fertilizer. I think more of our planters will take hold of it next season than last.

My experience the past season with the Anchor Brand on my Tobacco crop was very satisfactory. I have, since 1865, used every year upon my Tobacco crop fertilizers of various kinds, yet none of them have given me as much satisfaction as the Anchor Brand.

Notwithstanding the season for raising plants, setting them and growing a crop of Tobacco, was the most unfavorable I ever knew, all of my crop planted by 1st of July made a splendid return; the leaf was large, heavy, of fine body and altogether free from firing. I used 250 pounds to the acre sowed in the drill. Two of my tenants, Messrs. Wash and Harris, used one ton on thirty thousand hills. They had plants in time to set out their crops by 1st of July. Their land was only moderately good, yet they made a splendid crop for any season; I think double what it would have made without the Fertilizer. Their crops throughout will make a pound to every four plants, of rich, ripe Tobacco. No firing or specking in their crops. They are greatly pleased with it, and like myself will use it again.

Capt. J. W. HARPER, of Brunswick county, Va., writes:

On all my five places, your Tobacco Fertilizer last year did well.

Mr. JAMES C. MARTIN, of Goochland county, Va., writes:

I purchased one thousand pounds of your Anchor Brand Tobacco Fertilizer last Spring, which I applied to about three acres planted in Tobacco the 1st of June, and made the finest crop I have made since 1868. A good portion of the crop was large, rich and waxy. Those who have used your Fertilizer in this vicinity are pleased with its action on Tobacco. I never used any of your Fertilizer until the past season, and was very much pleased with the result.

Mr. B. G. BOISSEAU, of Dinwiddie county, Va., writes:

I have used your Tobacco Fertilizer (Anchor Brand) for two years, and am entirely pleased with it. The past season it was very satisfactory. Where I obtained a stand it cured up a dark, heavy Tobacco.

Mr. G. F. SHEPHERD, of Iredell county, N. C., writes:

Your "Tobacco Fertilizer" gave entire satisfaction the past season in this vicinity. There will be a large crop planted this year, if nothing prevents.

Mess. MORRISON, GAITHER & Co., of the same county, write:

Wherever your Tobacco Fertilizer has been used in this section, all hands report themselves satisfied.

We get from Alamance county, N. C., the following:

We used last year some of the Old Dominion on Corn and Tobacco Fertilizer on Tobacco, and found the results very satisfactory. We will use it another year. We have used the Tobacco Fertilizer for several years, and have never found it to fail of making excellent crops with favorable seasons.

L. B. McADAM,  
ELI McADAM,  
J. C. VINCENT,  
G. D. VINCENT,  
CLAY MURRAY,  
GEORGE FLORENCE.

Mess. PFOHL & STOCKTON, of Winston, the most westerly Tobacco market of importance in North Carolina, inform us that the Anchor Brand Tobacco Fertilizer "rules the roast" in their region of country, as nothing else has yet approached it in the production of fine yellow Tobacco.

Mess. T. A. RATLIFF & BRO., Rockingham county, N. C., write:

The report to us is that your Tobacco Fertilizer does not act so well on poor worn out old fields as it does on new ground, or second year's land; but where the soil is at all fertile it produces good crops of Tobacco, and planters say they can cure it brighter than that raised by Peruvian Guano.

Mess. BAILEY BROTHERS, of Iredell county, N. C., write:

We find, from our friends who used it, that the Anchor Brand Tobacco Fertilizer has given general satisfaction.

Mr. S. A. WHITE, of Alamance county, N. C., writes:

Capt. B. F. White reports the Tobacco Fertilizer acted finely for him, and paid him better than any investment made by him last year. He used a few bags only (see elsewhere what he says). J. C. Vincent, Eli McAdams, Clay Murray, Levi McAdams, J. R. Williams and George Florence, of Pleasant Grove, all used a few bags, and say that it did well.

Mr. STAFFORD ROBERTSON, of Nottoway county, Va., writes:

Your Tobacco Fertilizer acted well for me this year. I made large and heavy Tobacco with it on thin land; will want more in the Spring.

Mr. JOS. C. ENGLAND, of Hanover county, Va., writes:

I used your Tobacco Fertilizer on my Tobacco this year, and I am so well pleased with its result will continue to use it, preferring it to any fertilizer I ever used on Tobacco.

Mr. P. F. COGBILL, of Petersburg, Va., writes:

In every case reported to me, where your Tobacco Fertilizer was used, entire satisfaction with it was expressed.

Mr. EDWARD S. BUMPASS, of Hanover county, Va., writes:

I used your Tobacco Fertilizer last year; I dressed my land with farm-pen and stable manures; I put 200 pounds of your Fertilizer to the acre. I made a fine crop of Tobacco. I think the Fertilizer stands the dry weather better than any other.

Mr. J. L. WEAVER, of Prince Edward county, Va., writes:

I used your Tobacco Fertilizer last year. A portion of my crop was planted on the 27th of May, and some as late as the 4th of August. The early plantings did well, kept the Tobacco green and ripened up beautiful and heavy.

Mr. THOMAS R. JORDAN, of Halifax county, Va., writes:

I have to say that the Anchor Brand Tobacco Fertilizer gave entire satisfaction during the past season. In fact, during the four years I have been handling it, I have not a single instance to note of a customer finding fault with it. I believe it has come to be generally understood that for this—the bright Tobacco section—the Anchor Brand is best.

Mr. THOMAS N. SALE, of Bedford county, Va., writes:

I applied about 400 pounds of your Anchor Brand Tobacco Fertilizer on my crop last year. The season was unpropitious and difficult for plants—for planting, for growing and for ripening of the crop. Notwithstanding these difficulties, the action of the Fertilizer was most *decided and powerful*. As long as you have on the market the same article, I think you deserve the patronage of the planters.

Mr. W. M. REYNOLDS, of Louisa county, Va., writes:

I used the Anchor Brand Tobacco Fertilizer on my Tobacco crop last Spring—three hundred pounds to the acre; the Tobacco is very large and leafy and ripened well, with good body. I expect to use it again the present year.

Mr. J. S. FAULCONER, of Spotsylvania county, Va., writes:

It gives me pleasure to say to you that the Anchor Brand Tobacco Fertilizer gave entire satisfaction. I tried it side by side with —, using four hundred pounds of — to the acre, and only two hundred of the Anchor Brand. The — was planted some days first and yet the Anchor Brand made the best Tobacco. I shall use yours on all of my crop the coming season.

Mr. GEORGE T. JOHNSON, of Goochland county, Va., writes:

I used your Tobacco Fertilizer last year, and notwithstanding the drought it acted finely. I think my crop was much better last year than it was the year before; in fact I regard your Fertilizer as superior to any I ever used.

Mr. C. C. PARIS, of Charlotte county, Va., writes:

Your Tobacco Fertilizer acted very satisfactorily for me last year.

Messrs. MACLIN & GOODWYN, Tobacco Inspectors, Petersburg, Va., write:

The Anchor Brand Tobacco Fertilizer gives universal satisfaction.

Mr. W. L. HACKETT, of Buckingham county, Va., writes:

I have to say that your Tobacco Fertilizer which I used acted well; I put two bags on 5000 hills of creek bottom land of good quality, except some poor washed places in it, that I thought would not make much; but to straighten my rows had to work through; I dropped the Fertilizer in the hill, and when I got to the washed places I made the application a little heavier. The result was the Tobacco grew up uniformly, and in the poorest places was as large as in the richest land, a great many plants weighing nearly a pound after stripped.

Mr. SAMUEL C. HARRIS, of Louisa county, Va., writes:

I used your Anchor Brand Tobacco Fertilizer on my Tobacco crop last Spring, and I have the finest and the largest crop I ever raised. I have no hesitation in saying it is the best result I ever had from any fertilizer whatever.

Mess. PAYNE & GRAVELY, of Henry county, Va., write:

Your Tobacco Fertilizer is highly esteemed by all who used it last season. Its results will show an excellent display of fine samples of Tobacco.

Mr. RICHARD TINDER, of Spotsylvania county, Va., writes:

In reply to your inquiry about the Anchor Brand Tobacco Fertilizer used on my Tobacco last year, I have to say it gave entire satisfaction. I expect to use it again this year.

Mr. PAUL G. CAMP, of Caroline county, Va., writes:

I cheerfully give my testimony in favor of your Anchor Brand Tobacco Fertilizer. I tried it on Tobacco and Turnips, and the result in both cases was highly satisfactory.

Mr. C. A. SCOTT, of Albemarle county, Va., writes:

Your Anchor Brand Tobacco Fertilizer pays well when used liberally; and I have always recommended it to my neighbors.

Mr. JOHN L. MOTLEY, of Amelia county, Va., writes:

I have to say that your Tobacco Fertilizer acted remarkably well for me last year.

Mr. THOS. P. PURDIE, of Chesterfield county, Va., writes:

For many years I have been using fertilizers, and of almost every kind that is in the market. I take great pleasure in saying to you that yours is the best I have ever used,

and I must say I prefer yours on Tobacco to Peruvian, from the fact that it makes it much heavier. The growth is not so quick, but there is a great deal more weight in the Tobacco. That I bought of you last year acted like a charm.

[NOTE.—The late Dr. MADISON PENDLETON, of Louisa county, demonstrated, in the most thorough manner, what is urged for our Tobacco Fertilizer, in the matter of *weight*. We have a long season, and our endeavor is to arrange the Fertilizer so as to be of service to the end. *It does not give out.*]

Mr. SPENCER C. VAUGHAN, of Mecklenburg county, Va., writes:

The Tobacco Fertilizer bought from you last spring was used for tobacco on sandy soil which had been cultivated for a number of years.

I applied it in drills. The plants started off well, growing regularly, ripening uniformly, and producing an unusually good crop of tobacco, a large portion of which I class as fine yellow wrappers.

I attribute my success solely to the use of your fertilizer, which I consider the best I ever used, Peruvian not excepted. I also used it on plant beds, and was the only one in the vicinity with a sufficiency of plants to supply my neighbors.

I also tried it on vegetables with great success, and particularly on sweet potatoes, applied in the hill, it acted splendidly.

Mr. H. H. DYSON, of Nottoway county, Va., writes:

The fertilizer purchased of you last spring I intended to use on lot land, but owing to scarcity of plants was unable to plant but little on lot, so I used a part of the guano on 27,000 new ground hills; prepared the land thoroughly, ploughed with double plow, and then reploughed with single Dagon, and raked well; then laid off rows as I would lot land, and drilled the guano, using about 200 lbs. to the acre. On two rows through this land I used none. The difference from planting to time of cutting was so perceptible as to make the appearance of two rows being cut out. Many of my neighbors viewed the difference with astonishment. My tobacco was green from planting to cutting, and cured up very dark, making as large heavy shipping tobacco as I ever grew on lot land. I don't think the people of this section will use any other manure in future; certainly they ought not to; think my crop was doubled by the application above referred to.

Lack of space stops us here. We have letters from the following named gentlemen

of the same favorable import as the foregoing, as from others whose names even we cannot give. We refer to then all with the greatest pleasure: *Danville, Va.*—Maj. W. T. Sutherland, and all the tobacco warehousemen there, and at Durham, Reidsville and Winston. *Granville county, N. C.*—T. M. Lyon, E. E. Lyon, G. W. Watkins, M. L. Daniel, J. A. Watkins, J. H. Webb & Co. and J. B. Elliott. *Nottoway county, Va.*—P. C. Marker, W. E. Oliver, Saml. A. Lencare, Th. Jefferson, J. E. Perkinson, Miller & Fowlkes, Dr. W. T. Warriner. *Westmoreland county, Va.*—G. W. Blakiston. *Amelia county, Va.*—S. Scott, J. L. Townes, R. W. Barden, J. W. Layne, Peter Bréwer, Th. Y. Tabb, R. H. Beverley, J. R. Dunnivant, Dr. W. J. Cheatham. *Albemarle county, Va.*—A. W. Martin, A. D. Harlow, James Powell. *Nelson county, Va.*—M. H. Spotts. *Buckingham county, Va.*—Wm. M. Swoope, C. Glover, James B. Ficklen. *Cumberland county, Va.*—Capt. E. R. Cocke. *Halifax county, Va.*—Maj. R. L. Ragland. *Powhatan county, Va.*—Wm. H. Gordon, V. Walthall, E. B. Salmon, C. B. Goodman & Bro. *King William county, Va.*—Mr. Jas. G. White writes us, that in no single instance has our Tobacco Fertilizer failed to give satisfaction in his region. *Patrick county, Va.*—H. O. Broadus, Green Penn, and J. P. Critz. *Appomattox county, Va.*—Geo. Abbott, Sr., W. A. Tanner, W. A. Trent, Thos. D. Walton, John H. Tanner. *Caroline county, Va.*—J. H. Marshall, F. G. Claiborne, J. L. Cobb, C. W. Tompkins, Alex. J. Pugh, H. W. Broadus, G. W. Fuller, W. H. Jordan, R. A. Wright, H. Durrett, D. Webster, B. E. Pollard, H. A. Ware, R. Freeman, B. F. Taylor, S. W. Allen, W. J. Sale, A. R. Flippo, A. S. Beazley, G. W. Blanton, N. H. Carneal, W. G. Garrett, D. H. Yeager, S. E. Swann. *Hanover county, Va.*—M. A. Waldrop, J. P. Harris, T. M. Perkins, A. G. Ware. *Spotsylvania county, Va.*—Thos. S. Young, Frank Tompkins. *Charlotte county, Va.*—Maj. R. V. Gaines. *Dinwiddie county, Va.*—N. P. Branch, R. C. Hardy, J. P. Tucker. *Louisa county, Va.*—Ro. F. Moss, J. M. Baker, C. D. Parrish, C. A. and J. Perkins, C. Gooch. *Mecklenburg county, Va.*—M. A. Barnes. *Chesterfield county, Va.*—S. Y. Gilliam, &c.

#### ANCHOR BRAND

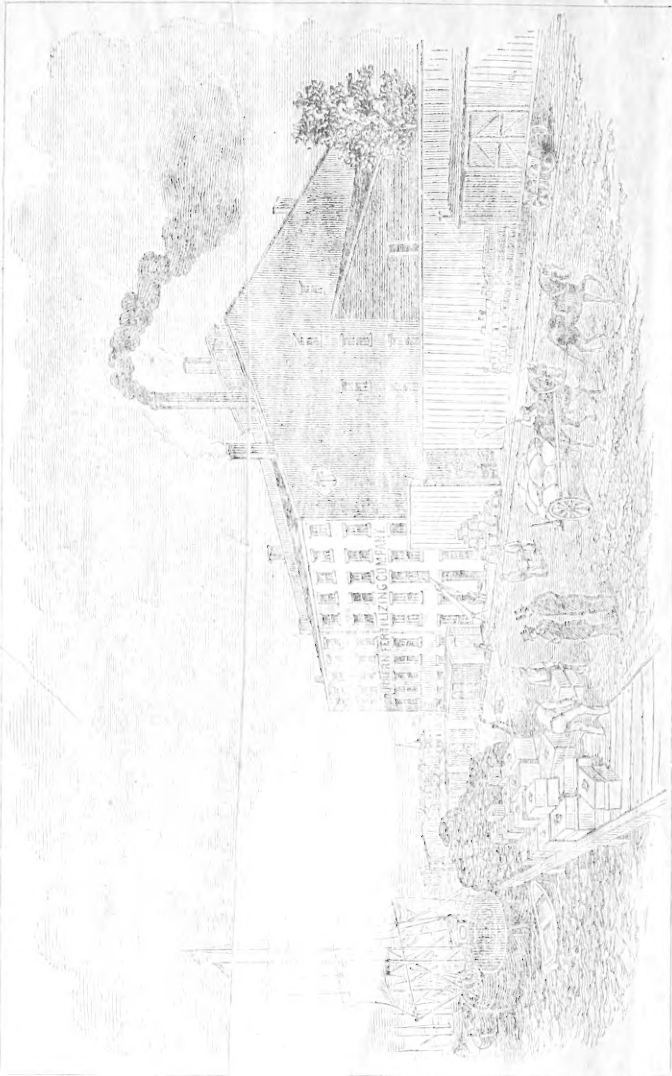
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